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Two main purposes of this study were (1) to determine knowledges and abilities needed to perform professional activities in large public libraries and (2) to determine th degree to which existing library education develops those knowledges and abilities. Using data collected from librarians in thirteen large public libraries and faculty in twelve library schools, a taxonomy of educational objectives for the preparation of public service personnel was compiled. Curricular content from participating library schools was also analyzed and compared to the desirable educational objectives. In addition to needed factual knowledges, desirable areas of higher intellectual achievement were identified, including comprehension, application, analysis, synthesis, and evaluation. Findings indicated that (1) librarians placed high priority on complex skills and abilities, (2) needed subject matter, related but not unique to librarianship, was not included in some library school curricula, (3) most factual knowledges regarding librarianship were adequately taught, and (4) the development of higher intellectual skills and abilities, above factual knowledge, was relatively neglected in the courses required for all students in the Master's Degree Program. Appendixes include a list of the participating libraries and library schools, a description of the methodology for recording data, and a 270-item bibliography (Author/JB)

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Anna C. Hall, Ph. D.

Carnegie Library of Pittsburgh

Pittsburgh, Pennsylvania

July 1968

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PREFACE

This research was prompted by a deep interest in education of professional librarians. It was made possible through the support of the Bureau of Research, Office of Education, U.S. Department of Health, Education, and Welfare and the sponsorship of the Carnegie Library of Pittsburgh, Pittsburgh, Pennsylvania.

Special thanks are due to Mr. Keith Doms, Director of Carnegie Library for granting the necessary leave to enable the investigator to undertake this study. Gratitude is also expressed to Dr. John Cowles, Dr. Donald Cleland, Dr. Jay Daily, Professor Allen Kent, Dr. Harold Lancour, and Dr. Frank Sessa, all of the University of Pittsburgh,for their advice during the period of research and for guidance in the report preparation. Appreciation is also expressed to Dr. Lester Asheim, Mr. Kenneth Dunning, Miss Clem Hall, and Dr. John Hall for invaluable statistical, editorial, and other advisory assistance.

Without the participation of a number of large public libraries and library schools, named in Appendix 1, this study would not have been possible. Their cooperation is gratefully recognized. It is unfortunate that each librarian and faculty member who participated cannot be acknowledged personally for their responses were most rewarding.

For permission to quote rather extensively from one of their publications, the writer is indebted to David McKay Company, Inc., New York.

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SUMMARY

A. The Problem

Renewed interest in library service in the 1950's and 1960's raised the question of adequacy and appropriateness of professional training for librarians. This question generated an examination and evaluation of educational programs. Discussions, vocal and written, were numerous pertaining to undergraduate versus graduate education, methodology of teaching particular courses, degree of generality or specialty desirable, and the effects of new practices and new technology on curriculum. Basic to all education, regardless of the field, however, should be clearly defined groups of desirable knowledges and behaviors which functionally describe satisfactory performance abilities within any profession for which one is educating. Statements of desired abilities provide guidelines for development of satisfactory curricula.

A Committee of College and University Examiners, in 1956, recognized another problem even more basic to developing suitable educational practices. It was the lack of acceptable definitions and terminology for stating objectives to serve as common ground for understanding among educators. This Committee produced a Taxonomy of Educational Objectives; Handbook I: Cognitive Domain to help meet this need. That Taxonomy, providing definitions of types of knowledges and abilities in the cognitive domain, was used by this writer to develop a comparative analysis of needed knowledges and abilities and related education. (See "D. Methodology" item number 5. of this Summary.)

B. Scope of Study

First, this study was designed to determine what some of the more critical knowledges, skills, and abilities were which enabled professional librarians to act effectively in specific kinds of professional activities. The specific kind of activity studied was the public contact or public service aspect of professional librarianship. A second purpose was to determine to what extent library schools prepared future professional librarians for performance of such activities.

C. Hypothesis

The working hypothesis upon which this study was pursued was:

> LIBRARY EDUCATION IN A SELECTED NUMBER OF AMERICAN LIBRARY ASSOCIATION-ACCREDITED LIBRARY SCHOOLS OFFERS THE TRAINING NEEDED TO PERFORM SPECIFIED TASKS ACCEPTED BY ADMINISTRATORS AND PROFESSIONAL LIBRARIANS AS NECESSARY TO THE OPERATION OF A LARGE PUBLIC LIBRARY.

D. Methodology

The methodology involved a series of steps briefly described below:

1. Instruments to be used for data collection were designed and tested.
2. A preliminary list of library tasks was derived from job descriptions, work sheets, and experimental testing of data collection instruments used in libraries.
3. Data was collected from librarians in 13 large public libraries by means of the critical incident technique.
4. Knowledges and abilities inherent in the performance of the

incidents were identified.

5. These knowledges and abilities were formulated into a classification called "Taxonomy of Educational Objectives for Public Service Librarians" using the categories and levels of complexity defined by the Committee of College and University Examiners as guides in determining intellectual levels characteristic of task performance.

6. Course information, reflecting content of curricula and methodology of teaching as it effected levels of possible intellectual achievement, was collected from 12 American Library Association-accredited library schools. Interviews were conducted with faculty members teaching courses of interest.

7. Curricular information was similarly analyzed in terms of knowledges and intellectual skills developed by the educational process.

8. Comparisons were made between needs which had been identified by librarians and the education offered.

E. Findings

The resulting data collected indicated that librarians, judging from frequency with which they identified tasks involving the complex abilities, place complex abilities of comprehension, application, analysis, synthesis, evaluation, and social skills in high priority compared to factual knowledge and vocational-type skills. Librarians also stressed the value of knowledge (and its applicability and use) in other disciplines, such as sociology; psychology and human relations; communication; management; and education.

A number of conclusions were drawn as to the relation between identified needs for public service librarians and library education:

1. Related disciplines, not generally included in library school curricula, are of considerable importance.

2. Factual knowledges considered unique to librarianship were adequately taught.

3. When related disciplines were included in the library school curriculum, instruction was usually at the factual level.

4. A number of courses developing higher intellectual skills were electives, therefore, many students possibly missed the available opportunities that existed for the development of those skills and abilities.

5. Regardless of the intent to develop higher intellectual skills, instruction stresses factual knowledge to the relative neglect of more complex objectives.

The hypothesis, on the basis of these findings was, therefore, not proven to be true. Instead, the study identified certain weaknesses in the overall content and teaching methods employed im much professional library education required of a Master's degree student today.

F. Implications of this Study

Similar characteristics of needed knowledges and their related skills and abilities as identified by librarians made them classifiable into two general groups, formal educational processes and on-the-job training.

1. Formal educational processes

One group of knowledges, skills, and abilities, considered to be the responsibility of formal educational processes, in reality, represented two different levels of training. Both, however, are of real concern to library school curriculum planners.

a. Preprofessional. Though there has been recognition of the values of some of the undergraduate specialties in such fields as science, art, business, and other specialized fields as a preparation for librarianship, it has long been assumed that the best background for professional training was a general liberal arts background. In light of the findings of this study, the variation in backgrounds resulting from present liberal arts education points to a need for thoughtful consideration of that assumption. The fact that many of the desirable knowledges and their related skills and abilities commanding high priority by librarians are not typically developed in library education nor unique to librarianship emphasizes the importance of the preprofessional training. Must library educators review the suitable prerequisites for admission? Or, is professional education itself to be faced with the challenge of insuring that graduates are equipped with all of these knowledges, skills, and abilities necessary for satisfactory professional performance? Will this require more interdisciplinary courses; the design of courses encompassing the desirable portions of a number of other subject fields; the use of more departmentally-shared faculty; special requirements for students deficient in some subject areas; or some combination of these?

b. Professional. The acquisition and development of the knowledges, skills, and abilities, considered unique to librarianship for the purposes of this study, were generally assumed to be the responsibility of formal library education. Since analysis revealed that even in those areas the development of the higher intellectual skills and abilities was neglected or narrowly specialized, a number of questions were posed. If professional education is to develop the higher intellectual skills identified as so important by librarians, rather than the vocational-type skills, what should the content of professional library education be? Is a new look at what courses are to be required and what are to be electives needed keeping in mind the applicability of specific kinds of courses for all students? Is a consideration of the needs for specialization for certain students in order? Is more emphasis needed on changed or improved teaching methods which effectively and consistently develop the higher intellectual skills?

2. On-the-Job Training*

Quite a number of the critical knowledges are so closely related to a specific institution that they are best learned, or can only be learned, on the job. It is incumbent, therefore, upon library administrators to reevaluate their own programs of in-service training. This is indeed important if professional formal library education is to achieve the high level of quality and development that librarians have indicated they believe it should achieve.

G. Recommendations for Related Research

The study reported here was aimed at a specific type of activity. Consideration should be given to the pursuit of similar analyses of the needs of professional library activities.

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* On-the-job training can also be conducted in a formal manner but the distinction indicated here is that it does not take place in what is considered basically an educational institution.

The problems created by the diversity of student backgrounds should be considered.

Library administrators should explore their responsibilities and possibilities for conducting suitable and effective in-service training.

I. PERTINENCE OF LIBRARY EDUCATION

The problem of suitable manpower for the operation of libraries has long been of concern, but in the last few years it has received increasing attention. Evidence of this has been the financial support received from the Library Services and Construction Act and government agencies for scholarships and research in education for librarianship. A number of studies which have been so funded are mentioned later in this chapter. The term "suitable manpower" reflects primarily, though not exclusively, two things. First, it implies a level and quality of training and education. Second, it presupposes the proper and most efficient utilization of that manpower. The two are not exclusive of one another since the utilization of manpower in a particular situation is, of course, partially dependent upon the value and appropriateness of prior training and education. However, it is the first concern, training and education, that must precede and will determine to a certain extent how effectively manpower *can* be used.

One need not go back very far in the literature to find numerous criticisms of library education and equally fervent rebuttals by library educators. But just what is the true situation? There appears not to have been a recent analysis and comparison in depth of what is offered in library education and what practicing librarians need to know. An attempt of this kind was undertaken in the late 1920's by professional librarians in cooperation with Dr. W. W. Charters of the University of Chicago,[1] as a means of providing information for texts and curriculum guidance.[2] The Fifth Annual Report of the Board of Education for Librarianship reported that "with the present commitments the series of textbooks prepared by the Curriculum Study will be discontinued, at least temporarily."[3] At that time one text had been completed,[4] one was in the process of revision, and four were still under review and criticism.[5] All were ultimately published.[6] Robert F. Mager emphasized that the first thing to be determined in any successful teaching operation is "What is it we must teach?"[7] Clearly, many in the field of librarianship have been cognizant of the need to know what should be taught. Ralph Munn recognized this, among other problems, in the discussions and criticisms of library education, when he said, "We often begin our consideration of professional training with the schools instead of the libraries for which they are training staff members."[8] Joseph L. Wheeler, while not agreeing on all points with the critics of library education, discussed at some length this problem of relationship between needs for professional qualifications and the education necessary to develop them. He, perhaps rightly, placed some of the responsibility for solving the dilemma of library education at the feet of the practicing profession and library administration as well as library educators.[9] Maurice F. Tauber in the "Introduction" to an issue of Library Trends cited "relations between performance on the job and library school training" as one of the crucial problems needing study.[10] Controversy still revolves around this elementary question of what do professional librarians really need to know and be able to do.[11]

An upsurge of interest in library education and its curriculum occurred after World War II and brought forth a number of innovations which were adopted widely. Many of these, such as removal of "professional" training from the training schools which had grown up in connection with large libraries, and reexamination of the curriculum, had been suggested by Dr. C. C. Williamson and others in the preceding twenty-odd years.[12] In the early 1950's an entire workshop under the sponsorship of the American Library Association was devoted to identifying a "core" of library education in an effort to designate what is needed by all librarians.[13] There also was renewed interest on the part of other professional associations such as the American Association of Library Schools and the Special Libraries Association, but differences of opinion between American Library Association committees, frequent changes of committee personnel, and differing personal opinions tended to erode the influence of these organizations on library education.[14]

There were other vocal and emphatic expressions of opinion, especially in the periodical literature, with regard to what library education should and should not be. A survey-type study was reported in 1951 regarding the professional education of librarians and documentalists.[15] It pointed to some of the problems involved in identifying just what librarians need to know. In addition, a number of other serious studies focused on specific areas. Two were attempts to analyze course content: one in the area of cataloging and classification[16] and the other in administration.[17] Another study reported in 1964 by G. Carlson, working under a National Science Foundation Contract, attempted to identify some of the processes a reference librarian goes through in searching for material or information.[18] In 1966 John A. McCrossan attempted to analyze the relationship between library education and competence in adult book selection in public libraries.[19] As a guide for developing a program of continuing education for library administrators, an attempt was made at Rutgers University to determine, among other things, what administrators felt were their most urgent needs in the way of education which would be helpful to them in the administration of their libraries.[20]

In May of 1967 a conference in Chicago attempted to identify the jobs which library technicians might do. Although that meeting did not deal with professional workers, the discussions certainly provoked serious thoughts on the part of the graduate-level curriculum planner as well.[21] An extensive study of on-the-job training was initiated by Systems Development Corporation of Los Angeles in 1967 for the purpose of developing training aids.[22] Like the Chicago conference, it did not have formal graduate education as its focal point, but an identification of what should be taught was considered a necessary basis for the development of training procedures and programs. As background, considerable analysis of the kinds of tasks performed in libraries was involved. Another study completed at the University of Michigan tested the validity of the core concept in the training of university librarians.[23] While this did not deal with public librarians, enough general aspects were touched upon to make it of interest to those engaged in education for public librarianship as well. Robert S. Taylor recommended courses and curricula for the training of those working in information sciences in a report sponsored by the National Science Foundation.[24] A study initiated at the University of Maryland, School of Library and Information Services in 1967 focused upon the manpower problem[25] as did the American Library Association special presidential program at the 1967 convention in San Francisco.[26] An invitational conference in Seattle in 1967 investigated some of the problems of education for medical librarianship.[27] Also during 1967 a study with regard to the training of supportive staff considered the problem of library education in general.[28] Each of these efforts made a positive contribution toward identifying needs and to the exploration of relationships between education and practice, but much remains to be done.

The author of this report has drawn upon all of these for appropriate content but has aimed, perhaps more specifically than any of the previously completed studies, at isolating knowledges, skills and abilities involved in certain types of activities and with an approach which may be quite apart from the traditional framework or title of the job holder who performs them.

Seemingly the expressions of "professional" and "non-professional" have been used without sufficient understanding of just what these designations mean in regard to job responsibilities. Although the American Library Association Board of Personnel expended a great deal of effort to produce a valuable identification of such duties,[29] discussions persisted about professionals doing non-professional work and non-professionals doing professional work. Part of the fault may have been the lack of careful and detailed analysis of the work performed in particular jobs. Also, it may be that certain activities which had been classed in the non-professional category did, in fact, fall into the professional category under certain circumstances. Dr. Lester Asheim suggested such possibilities in "Manpower; a Call for Action" when he stated:

> What is needed here is a much more analytical look at the operation of a library, with a view to restructuring job descriptions and job classifications, not by the old familiar job titles and traditional clusters of assignments, but rather by some new approach--perhaps based on the actual amount of background and training needed for each task.[30]

For some time, there has been much discussion and disagreement over educational content and whether the educational process properly prepares students for the profession. This question was raised by Asheim when he again called for education which more fully meets the demand of the field.[31] How well library education is currently meeting this need cannot be fairly or intelligently discussed until the need itself is defined. As Ralph W. Tyler said, "Planning the education for a profession requires an understanding of the nature of the profession."[32] This study, therefore, attempted to make that determination in a limited way, and proceeded on the hypothesis that:

> LIBRARY EDUCATION IN A SELECTED NUMBER OF AMERICAN LIBRARY ASSOCIATION-ACCREDITED LIBRARY SCHOOLS OFFERS THE TRAINING NEEDED TO PERFORM SPECIFIED TASKS ACCEPTED BY ADMINISTRATORS AND PROFESSIONAL LIBRARIANS AS NECESSARY TO THE OPERATION OF A LARGE PUBLIC LIBRARY.

There is no claim that this study is a definitive one. On the contrary, it is hoped that through experimentation with methodologies and identification of a partial taxonomy of educational objectives, the door has been opened to more thorough and revealing studies along these lines.

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II. DEVELOPMENT OF SPECIFIC JOBS IN LIBRARIES

It is difficult to trace historically the development of distinct jobs in terms of the activities performed by librarians. From their beginnings, libraries were established as a means of preserving the rules and records of government and religion as well as the cultural heritage which had been recorded by previous civilizations. Many of these libraries were "public" in the sense that they were not solely for the use of their proprietors or owners. Regardless of whether they were supported by royal households, private individuals, or religious bodies, they were often open to scholars. By the fourth century A.D., there were a number of such libraries throughout the civilized world, twenty-eight of which were in Rome alone.[1] The librarians themselves were often scholars employed to develop and facilitate the use of these collections. And, it is known that in addition to the preservation of the collections, some very early means to facilitate the use of books in those libraries existed.[2] But the duties performed by the scholars, scribes, and monks of the Western world who cared for these collections do not really coincide with the duties of a librarian today. Library jobs as they exist today, or as they are of concern to this study, did not really develop until modern times.

Of particular interest to this study are the developments within the last century and a half. In America, early 1800's saw the beginnings of the public library as we know it founded on legislation providing support from public funds.[3] From the resulting growth of libraries and their services came a considerable proliferation of jobs which could be described in terms of definite functions. Work became more specialized and, as this led to departmentalization, more people were doing the same kind of work even though their jobs were dispersed throughout different areas of the library. With this specialization and departmentalization, came the need for a means of evaluating job requirements or classifying them into groups in order to specify comensurate responsibilities and remuneration.

The purpose of job classification is to identify likenesses and differences of duties[4] and responsibilities regardless of departmental location[5] or to identify a position as "a group of current duties and responsibilities assigned or delegated by a competent authority, requiring the full-time or part-time employment of one person."[6] Ismar Baruch, when he was with the United States Civil Service Commission, identified six kinds of position-classification. These six were based on salary or pay, method of determining salary or pay, duration of intermittency of employment, means by which jobs were filled, location with the organization, and work involved.[7] Only the last, work involved, was of concern to this study.

In public libraries, the formal division of jobs by types of duties performed has taken place largely within the twentieth century. Alice Bryan traced the establishment of one library's position-classification scheme prior to 1900,[8] but it was not until 1908 that the concepts of such personnel practices were "carried to the point of practical application in any jurisdiction in this country."[9]

The Civil Service Commission of the City of Chicago made a contribution to the development of the techniques of such practice when, in 1905, it instituted a policy of grading on the basis of duties performed.[10] Although some of the problems which arose from the lack of such practices in the United States government and elsewhere had been recognized many years earlier, it was not until the Classification Act of 1923 that the federal government began to operate on a firm and systematic basis in the area of position-classification for federal jobs.[11] In the late 1930's the Civil Service Assembly's Committee on Position-Classification and Pay Plans, under the chairmanship of Ismar Baruch, endeavored to produce a comprehensive report which was to become a landmark in position-classification and pay-plan development.[12]

Almost twenty years prior to the publication of that report, the American Library Association had become concerned over the job classification problem and, in 1922, it joined with the Bureau of Public Personnel Administration in making a survey of library personnel.[13] Individual librarians' and the American Library Association's subsequent interest, successes, and publications in this area were well documented in 1957 by Hazel B. Timmerman in an issue of *Library Trends*.[14] She noted that by that time quite a number of public libraries were functioning under classification plans. The development of interest in this field on the part of the profession can also be substantiated by checking volumes of *Library Literature* in which numerous entries appear from the 1920's under the headings "Personnel," "Job Analysis," "Position Classification," "Salaries," and "Classification and Pay Plans." Maurice

Tauber's Technical Services in Libraries[15] also could be considered a contribution to the classification of positions in libraries, since it identified processes typical of certain functions in a somewhat more formalized structure than was universally accepted at that time.

Thanks to the early interest of the American Library Association and certain individuals, there was quite a body of literature in this area upon which this researcher could draw. This researcher used these materials in beginning to develop a working list of tasks on which to build.

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III. PROFESSIONAL EDUCATION FOR LIBRARIANSHIP

The development of formal library education has been well documented by so many capable writers that, aside from a very brief review of a few landmarks, only those aspects which are pertinent to this study will be considered in any detail.

Sarah K. Vann's, Training for Librarianship before 1923[1] gives chronological and factual coverage for the early period. Charles Churchwell reviews thoroughly the factors of influence on library education for the period 1919 to 1939.[2] Of a more interpretive and analytical nature, recalling events up to 1948, is Louis Round Wilson's, "Historical Development of Education for Librarianship in the United States."[3] In this paper Wilson identifies what he considers to have been the ten major factors of significance:

1. The First School at Columbia[4]
2. The Association of American Library Schools[5]
3. The Williamson Report[6]
4. The Board of Education for Librarianship[7]
5. The Ten-Year Program of Library Service of the Carnegie Corporation[8]
6. The Establishment of the Graduate Library School[9]
7. The Contribution of Practicing Librarians[10]
8. The Role of Certification Agencies[11]
9. Studies of the Past Decade[12]
10. New Curricula[13]

The studies of the last decade which Wilson mentioned as item number nine, were not named for there had been such a proliferation of these that Anita Hostetter compiled a bibliography covering the years 1936 to 1939. These three years and the next twenty produced a number of reports, conferences and institutes which became the classical record of professional library education's changes and development.[14] An article which reviews much of the significant literature up to 1961 is Eugene H. Wilson's "The Preparation and Use of the Professional Staff."[15]

Specifically pertinent to this study, of course, were the development of formalized professional training and the trends in curricula. The first formalized education started with Melvil Dewey's School of Library Economy at Columbia in 1886.[16] The formalization of instruction through a planned sequence and content of courses was perhaps one of the greatest contributions made in the establishment of the school.[17] Dewey, as well as others, recognized the incongruous situation of the librarian, "whose profession has been so much exalted,"[18] having to learn the trade by "his own experiments and experience."[19] He deplored the fact that there had not even been a real system of apprenticeship that provided a "regular plan of training to all the varied work."[20] To provide such a plan was possibly his main purpose in promoting a school. And so, with the beginning of the School of Library Economy, a curriculum and systematized instruction were brought to librarianship.

It was a very limited curriculum. Dewey's first proposal indicated the intention of teaching "Practical Bibliography proper," "Books," "Reading and Literary methods."[21] But proliferation set in almost immediately, so that in the Circular of Information:

1886-7, while still aimed at very practical application and confined strictly to the work peculiar to a library, fourteen subjects of study were listed including the usefulness of libraries, buildings, and administration.[22]

Dewey considered actual work in libraries as part of the scheme of systematized training and felt, therefore, that a training school should be attached to a library of some consequence and that these should be among those managed and directed by enterprising librarians.[23]

Dewey's curriculum and basic framework, his ideas of organization and responsibility for education prevailed generally until the late 1920's.[24] But the 1920's brought, or at least spawned, considerable change. In 1923, Dr. C. C. Williamson's Training for Library Service,[25] which was one of the contributions made possible by the Carnegie Corporation, started a completely new trend by strongly advocating, among other things, that professional library education be removed from libraries and the training-class atmosphere. He suggested that they become professional schools within institutions of higher learning.[26]

At the time of Dr. Williamson's study there was very little agreement regarding what should be required, or even consistency in what was required in the way of preprofessional education. In 1923, admission requirements ranged from high school graduation to four years of college.[27] Only the two schools at New York State Library School and the University of Illinois were in the latter category. Those library schools lacking the college degree requirement gave examinations as an alternative measure of suitability for admission.[28]

However, Williamson felt that such tests were woefully inadequate for their purposes.[29] Although he helped crystallize thinking with regard to the need for standardized admission requirements, the winds of change were already in the air. Only six years later, in 1929, four more of the accredited schools had college graduation as a requirement for admission.[30]

The great migration of training schools from libraries to universities was only a partial solution to library education's problems. Under university jurisdiction, it was anticipated that course content would be in keeping with standards of other graduate and professional schools,[31] and the problem of integration with general preprofessional or undergraduate library education presented itself. University requirements and professional requirements as viewed by practicing librarians are not always easy to reconcile. Williamson not only noted a number of stages of change in curricular content before 1923, but predicted more to come when he remarked:

> The library school curriculum has passed through something of an evolution, and it is quite likely to undergo even greater changes in the future. The schools at first confined their attention largely to technical library subjects, such as cataloging and classification. Later, cultural and other studies were introduced to make good any deficiencies in the student's education."[32]

The tendency toward curricular expansion was evident even in the very early days of Dewey's School of Library Economy. However, by the time of Williamson's report, the general tendency had been largely to eliminate the informational and cultural courses as this background was presumably guaranteed to the necessary extent by the admission requirements.[33] The graduate-level section in the Minimum Standards for Library Schools, adopted by the Council of the American

Library Association at Seattle in 1925, listed seven required courses and thirteen electives.[34] All of them, judging from their titles, must be considered as having been strictly oriented toward the processes and operations of a library.* This was the dominant situation when the shift to academic institutions gained momentum. When the teaching of library science was undertaken in academic institutions, a question naturally arose regarding the appropriate level of instruction. The extremely practical and technical orientation of the curriculum was considered not to be particularly appropriate to a school at the graduate level. This was, perhaps, a great factor in the decision made at that time to award a bachelor's instead of a master's degree upon completion of the fifth year of work. This decision was accepted by the Board of Education for Librarianship upon the recommendation of the Association of American Universities.[35]

By the late 1940's, at least three schools, Chicago, Illinois, and Columbia, had deviated considerably from this highly technician-oriented approach at the fifth-year level. Much of the technical type of training was instituted at the undergraduate level.[36]

The period of transfer of the jurisdiction for education of librarians from libraries to universities, which was quite rapid between 1925 and 1935,[37] also saw a number of other developments of interest to this study. Over the years there has been controversy over the professional status of librarianship. It is evident that controversy with respect to professionalization in a number of fields still exists.[38] However, it was probably the attempt to attain what could be considered socially acceptable professionalism that partially gave rise to some disagreement over what should be included in the library curriculum and who should dictate its content. It was almost inevitable that this shift in control would pose a danger by creating divided camps with librarians generally in one camp and library education in the other.

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*Required: Book selection and allied topics; Children's literature; Reference and bibliography; Cataloging, classification, subject headings, etc.; History and administration of libraries; Field work, observation and visits; Library work as a profession. Electives: Cataloging, classification, etc.; Cataloging for the university and scholarly library; Field work, observation and visits; Advanced work in courses already named; Children's literature; Library work with children; Story telling; Medium-sized public libraries; Small public libraries; School libraries; Special libraries; College and university libraries; and Library extension work.

Library education, until Williamson, had been largely in the hands of the practicing librarians and, according to Williamson, there was sometimes too little distinction between the training which was offered to professionals and clericals.[39] Many of the advantages attributed to field work were considered by Williamson to be sheer student exploitation, or, at best, a waste of time.[40] Many library administrators, as a result of a lack of distinction between professional and clerical training, had become accustomed to new graduates who were trained in many of the more clerical-type tasks and techniques,[41] and they continued, thereafter, to expect a technically oriented product from the library schools.[42] Perhaps this accounted for the fact that for a time the contributions of librarians, as a group, toward professionalizing librarianship were considered conservative at best.

It was both assumed and stated in many places by many people that the purpose of raising library education to graduate status was to improve its quality. Therefore, it is not surprising that, as educators took over, an air of "away with the old and in with the new" prevailed. Some justification for this attitude was undoubtedly warranted for, as Leon Carnovsky pointed out in 1942, there were dangers in deriving curriculum solely from practice, especially if that practice were to be perpetuated without ever being questioned.[43]

A competitive spirit and almost dichotomous attitude developed over whether practice should dictate education or education should dictate practice. This dispute has continued to focus attention on the curricula of library schools to the present time. Wheeler touched upon this problem in the conclusion of his Progress and Problems in Education for Librarianship,[44] and Harold Lancour expressed strong feelings in favor of the educator's predominance in curriculum development:

> The profession of librarianship has grown too great in stature, too complex in its organization, too rich in its intellectual content, to let preparation for it be in the hands of those who are concerned only with immediate needs.[45]

This was written in 1948 when professional library education had only recently been placed in the hands of higher education faculty and the memories of conditions which had existed were still fresh. Lancour's concern with regard to the importance of what might be called "long-range education" was, therefore, relevant to the problems of the time and even today is shared by others.[46] In line with what he no doubt saw as serious considerations for the continued improvement of library education, he further stated:

> Courses of intellectual depth, lectures that are worked and reworked into books, research

> programs that lead to significant contributions to our literature will never be the creation of part-time instructors.[47]

and again:

> A large part of the educator's function in this latter day must be anticipatory, to decide what developments and directions the profession is likely to take in the future--perhaps in some cases to decide and determine what course it should take in the future and then to prepare people who will bring it to fruition.[48]

He goes further in accounting for many of the great contributions to library education during the period of transition from library-conducted to university-conducted training:

> They have come because the problems of library education have been attacked by those competent to do so and because library education has been subjected to the critical appraisal of library educators and not librarians.[49]

It should be noted that Lancour did not stand alone in such views, but rather that others in professional library schools shared this opinion. Evidence of agreement with his statement was the philosophy of the Graduate Library School in Chicago. That school broke rather drastically with the traditional library-training-school curriculum, a break which was later heralded as one of the ten most important events in the field of librarianship during the 1920's.[50] However, the dilemma of practical versus theory in education was not new, nor was it unique, to librarianship. In 1929, the President of the Carnegie Corporation noted that the question of whether teaching responsibilities should rest in the hands of experienced practitioners or "mere academic theorists" had been of concern to a number of professions for some time.[51]

In the years following 1948, when Lancour had expressed his views, the teaching of the theoretical content and concepts of librarianship became firmly anchored in the institutions of higher learning. Gradually more and more professional librarians and administrators were the products of this educator-oriented philosophy of training and, if education had accomplished its purpose, it would be surprising if they failed to share this anticipatory and broadened outlook. Much of the variation in opinion may have been caused by a lack of data which could lead to a rational distribution of educational responsibility between the institutions of higher learning and the libraries. The broad approach of university curricula is not always easily integrated with the practical and specific needs of a particular institution. This study is intended to contribute to mutuality of understanding by identifying and describing library tasks in terms useful to greater precision in library education.

Dissatisfaction and conflict can be healthy signs of a striving toward progress and improvement. If such differences of opinion are converted into profitable communication and resolution of the main problems they are especially worthwhile. There can be no complete or permanent panacea to all problems in a constantly changing environment. However, as H. E. Howe noted, even in the 1940's, first-class library service should be the goal of the entire profession.[52] It is only with such a goal as first-class service in mind that personnel will be properly educated to fulfill an obligation to the profession and society, and that education will in turn fulfill its obligation to both.

Although uncertainty still prevails as to exactly what should be taught at what levels, again librarianship experiences an affliction which has been chronic in many professional schools. Mrs. Dorothy Bird Daly, of the Bureau of Family Services, Department of Health, Education, and Welfare, and project director of Manpower Task Force, related similar problems with respect to the field of social work.[53] Nursing Education has been occupied with this problem over a period of several years, as Dr. Mildred Montay pointed out when she appeared on the same panel with Mrs. Daly. The medical profession struggled with its quagmire of educational content and levels following Abraham Flexner's famous study in 1910.[54] It continued to examine the same fundamental questions in 1966, as indicated by the report of the Citizens Commission on Graduate Medical Education.[55] Similar problems faced by Engineering in the 1960's were documented in an article by Harold A. Foecke[56] and T. Keith Glennan in "Inventing an Education for Engineers."[57] Architecture was caught up in similar uncertainty, as noted in The New York Times in 1966.[58]

Other professions could be used as illustrations but the point has been made clearly enough to indicate that a shift of educational responsibilities from one level to another has inherent difficulties. These difficulties involve authority over the selection of content, timing, level, and method of instruction of the courses. They are also closely related to the degree of separation between education and practice. Interaction of practitioners and educators is called for in all professions if the desirable and delicate balance between the two is to be maintained.

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IV. LIMITS OF THIS STUDY

The research of this study was limited to specific kinds of tasks. It did not attempt to identify all knowledges, skills, and abilities needed by all types of librarians. Instead it was concerned with various types of jobs identified by professional practicing librarians at various levels as critical to the satisfactory performance of certain kinds of tasks. Against this list of identified needs the professional education of librarians pertaining to the chosen area was analyzed. Also, the investigation was restricted to the cognitive domain, as identified by a number of authorities in the field of education.

At the American Psychological Association's Convention in Boston in 1948, the idea of producing a classification of educational objectives was proposed.[1] A Committee of College and University Examiniers began work and identified three kinds or domains of education. The first, the cognitive domain, dealt with the recognition or recall of knowledge and the development of intellectual skills and abilities employing such knowledge.[2] The second domain, called the affective, was concerned with the development of interests, attitudes, and values, while the third, the psychomotor domain, referred to the motor skills and the manipulative area. By 1956 this Committee, under the editorship of B. S. Bloom, Professor of Education, University of Chicago, had published the first part entitled Taxonomy of Educational Objectives; The Classification of Educational Goals; Handbook I: Cognitive Domain.[3] It is with this area that this study deals. The above work was drawn upon considerably and cited frequently in this report and in the interest of brevity is hereafter referred to as Bloom's Taxonomy or simply as the Taxonomy.

Although a specific area of tasks was selected for this study, it was also desirable that it be broad enough to produce significant data. There is, of course, considerable overlap in the knowledges, skills, and abilities used in a great number of library positions. For example, catalogers and those librarians doing advisory work employ like skills when required to use a library's catalog, even though the degree of cataloging knowledge necessary may vary with the kind of job. It was specified that the choice for the area might depart from the traditional framework of job descriptions. Had the selection been based on job descriptions it would have covered too many types of tasks for analysis in a single study of this kind. Selecting a type of task, and not a type of job in the usual sense, did not, of course, imply that the activities were unique to that task only. However, it did help restrict concern to the kinds of things most typical of the tasks under consideration.

Public Service was the task area chosen. It is defined as all the public-contact segments of a number of jobs such as reference librarian, reader's advisor, and children's and young people's librarians. The inclusion of the last two may, at first thought, seem inappropriately classed with the others. However, analysis of the basic activities underlying these kinds of services affirmed the logic of their inclusion. Dealing with different levels and kinds of public requires different particulars of knowledge, but upon examination it was found that these particulars are, nevertheless, usually of similar types. For example, a storyteller may contend that what she needs to know and be able to do makes her task unique from that of an adult-book reviewer. This is correct, but it is correct only up to a point. The particulars of storytelling are, indeed, different from those of book reviewing in that different types of materials are selected for different types of audiences, and presentation requires different techniques. But they also are alike in that in both cases selection is basically the choice of material suitable to a purpose and presentation is production and delivery of a communication in a manner appropriate to the expected audience. Other analogies could be drawn, but an examination of the abilities identified in the classification of tasks which was developed in this study will show the reader that this same principle pertains time and again.

With the limits for concern so defined, it was then possible to proceed with the collection and analysis of data.

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V. IDENTIFICATION OF DESIRABLE EDUCATIONAL OBJECTIVES

As stated in Chapter I, the study being reported here had two major purposes in mind. The first was the identification of desirable performance proficiencies for specific tasks in large public libraries which could then be stated in terms of educational objectives. The second was the analysis of appropriate curricular content in selected library schools in order to determine the relationship between the needed educational outcomes and the instruction offered. This chapter deals with the first, the identification of needs and the formulation of a list of desired educational objectives reflecting those needs. The processes and methodology necessary to achieve these goals are described below and the last section of this chapter presents a partial Taxonomy of Librarianship for Public Service.*

A. Collection of Library Data

The following pages briefly describe the methodology employed in selecting the library respondents from whom the data was collected, the instruments used, and the process of collection itself.

1. Sample Selection

The sample for this study was chosen by the method of purposive selection which allows for the selection of a sample according to a criterion or criteria known as controls.[1] Several controls were used. All libraries selected were "public." One definition of public libraries is that they are under the direct or indirect jurisdiction of a city or county government.[2] This was accepted for this study. Libraries were also "large." In this respect the designations of Mr. Robert Leigh[3] and Enoch Pratt Free Library's "Salary Statistics for Large Public Libraries"[4] were accepted. Mr. Leigh's base for classification by size has also been used by the United States Office of Education in the compilation of its Statistics of Public Libraries.[5] There is considerable variation within this group, so a further control was set of between approximately 300,000 and 3,500,000 volumes. The information in Statistics of Public Libraries[6] was accepted in determining the collection sizes of libraries selected for this study. Another control was that they must offer a variety of collections and services. A reasonable geographic distribution over the United States in order to avoid any possible significant regional bias was the last control.

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*Hereafter often referred to as Taxonomy of Librarianship.

It was intended that visits would be made to approximately 10 libraries. Letters explaining the project and requesting cooperation were sent to 17 libraries in order to allow for attrition of various kinds. One did not reply, two felt they could not participate because of what appeared to be legitimate pressures of the moment, one was eliminated for other reasons, and 13 were visited by the investigator conducting and reporting this study. These libraries are listed in Part "A" of Appendix 1.

2. Critical Incident Technique

The collection of data from libraries was aimed at "what" was involved in the performance of certain professional library activities. A technique used quite frequently in isolating the desirable knowledges, skills, and abilities for certain tasks is the "critical incident technique." It was perfected largely by John C. Flanagan at the University of Pittsburgh and the American Institute for Research in the 1940's and 1950's, although Flanagan attributed its foundations to Sir Francis Galton nearly seventy years ago:

> By an incident, is meant an observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act.[8]

Many studies employing the critical incident technique have been aimed at identifying critical requirements for satisfactory performance. The technique involves collecting data from observers in the profession who describe knowledges and behaviors which they consider critical to performance* and it has been used in a number of professions. It was used in determining ethical standards of psychologists, teacher competencies, requirements for school board membership, and pilot proficiencies.[9] But it has also been used successfully for what is called "the measure of typical performance." This measure provides a check list of important behaviors or a functional description of a job. The measure of typical performance is an approach which has been cited for its important contributions to the critical incident technique as a whole.[10] It was pertinent to this study as one of the purposes of this research was preparation of a functional description or list of needed abilities of selected jobs performed in large public libraries and a check list of behaviors important to the activities of those jobs.

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* How this particular characteristic applied to this study is described in Appendix 2.

Forms drawn up for the collection of critical incidents were tested on 16 staff members of the Carnegie Library of Pittsburgh for efficacy and clarity. They proved to be adequate and after some minor adjustments, mostly of arrangement, they were reproduced for use in collecting data from the librarians chosen as respondents for this study.

3. Data Collection

The actual data collection involved three considerations which are described below: a. Preliminary list of tasks; b. Collection of data from libraries; and c. Amount of data collected.

a. Preliminary List of Tasks. Before data could be collected from libraries, a preliminary list of knowledges, skills, and abilities had to be constructed to serve as a framework within which the data collected could be controlled and recorded. The list was evolved through a number of steps. First, extensive reading in all areas of library processes and services provided a foundation. Second, the references listed below were checked for possible additional tasks: Classification and Pay Plans for Municipal Public Libraries,[11] Position Classification Standards[12] of the United States Government, Dictionary of Occupational Titles,[13] the Descriptive List of Professional and Non-Professional Duties in Libraries,[14] "Library Tasks: A Classified List,"[15] the list of activities which were deemed to be professional in connection with a manpower utilization study which was carried out at the Carnegie Library of Pittsburgh,[16] and Library Manpower: Occupational Characteristics of Public and School Librarians.[17] Third, actual job descriptions from 13 large public libraries were studied to help formulate this list. Fourth, since job descriptions tend to be in general terms, daily work tabulations from two libraries on which librarians had recorded their every action for specified periods of time were checked for further detail and possible additions which might otherwise have been omitted. Finally, the list was revised in accordance with the data gathered during the period of testing the critical incident technique upon 16 librarians at the Carnegie Library of Pittsburgh, The product of that revision was a preliminary working list in which 180 entries appeared. These entries represented knowledges and their related skills and abilities typical of a wide variety of library activities.

The data collected from the first library visited were checked against the preliminary list, to determine if other additions were necessary. None was apparent, so the collection of data from libraries was continued. After visiting the fifth library, one new knowledge was added to the preliminary list bringing the total number to 181. No further additions were made after visiting other libraries.

b. Collection of Data from Libraries. Through the Director of each institution, arrangements were made well in advance for a visit to the selected libraries. In every instance it was requested that a number of professional librarians be assembled for a general meeting. These librarians were to represent various job levels and it was specified that there also be representation from each department. At this general meeting, the purpose of the study was described and the methodology explained. Forms were distributed on which the librarians were asked to describe critical incidents. The written instructions* indicated that what was desired was a description of the situation and what the professional did. Personal judgements of why things happened as they did were not to be included. These instructions were repeated in the oral explanation.

It has been shown in previous use of the critical incident technique for data collection that when suggestions are made by the data collector as to type of incident desired that frequently the responses may be weighted in favor of those types.[18] The librarians, therefore, were given no lists which might suggest to them any particular phase of the library's operation from which they were to choose their incidents. Rather, they were informed that they were free to describe professional performance in any area which they had had an opportunity to observe. It was anticipated that some difficulty might arise from the possibility of collecting data which was not really professional in nature. When the data were being analyzed, however, there was actually no problem in this respect. All activities described fell clearly within what could be identified as professional library activity as defined by the American Library Association and the United States Civil Service.

The participants describing critical incidents are known as observers since they described the actual activities and performances of other professional librarians in action. These observations reflected two types of performance or incidents: effective and ineffective. Effective performance was a situation in which, in the opinion of the observer, the other professional or professionals being observed had acted effectively in performing the task at hand. Ineffective performance was a situation in which the observer felt that performance had not been satisfactory. Individual interviews were scheduled with each observer in order to review the incidents which had been described.

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*See sample form, Appendix 2.

Some incidents describing each type of performance were requested in order to determine whether the lack of any knowledges, skills, or abilities would be disclosed in ineffective incidents which were not noted through effective incidents. No contributions were made by the 115 ineffective incidents that were not also identified by the 258 effective incidents.*

Participants were guaranteed that information given to the investigator in any form would not be identified with any individual or institution in this report. This fact was explicitly stated in the letters to library directors which solicited their cooperation and again at the time the project was explained to the individuals at the group meetings. This agreement was adhered to throughout. Individuals were asked to indicate the types of jobs for which they would consider the knowledges, skills, and abilities involved to be of importance. This was needed to identify those classes which were of importance for public service librarians.

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*Appendix 2 contains a sample incident and a description of the analysis and recording process.

c. Amount of Data Collected. The fact that some classes in the preliminary list of knowledges and tasks were not identified raised the question of how much data should be collected before the failure of a knowledge, skill, or ability to be mentioned would be accepted as evidence that it was not especially important to the public-service activities under consideration here. Previous use of the critical incident technique has provided criteria for determining how much data should be collected. Collection should continue until incidents no longer add significantly to the data already accumulated. This offers reasonable assurance that the most relevant factors have been included.[19]

After 13 libraries had been visited, a check was made to determine how much was being added by each additional library. As would be expected, after the first few libraries the rate of increase in the number of new classes that would be introduced by data from each library became progressively smaller. The data collected from the last seven libraries did not extend the list of classes applicable to public service activities in the context of this study. Therefore, 13 libraries were considered an adequate sample.

B. Analysis of Library Data

When it had been determined that no further knowledges, skills, or abilities were to be added to the preliminary list, an orderly classification had to be developed for the final tabulation and analysis of library data. This process involved both taxonomic and analytic research. Their applicability to this study is explained below.

1. Methodology Employed in Analysis

The history and development of taxonomic research is long and complex. The references cited in the next few pages offer considerable background from the time of Aristotle through the days of Carolus Linnaeus, A. P. de Candolle, Darwin, and many others. While great depth of understanding is not needed here, some clarification of its relationship to this study is appropriate.

The term has been applied primarily to the biological sciences but it has taken on increasingly broad interpretations by virtue of the definitions taxonomists themselves have given it. J. Heslop-Harrison stated that taxonomy is the study of the principles and practices of classification, and in a general sense, "is concerned with a common and fundamental method of handling information of all sorts, biological and non-biological."[20] John R. Gregg has defined a taxonomic process as that of "successively partitioning some initial set of organisms into subsets each of which belongs to some taxonomic group."[21] George G. Simpson described taxonomy as being included in a broader concept of "systematics" but encompassing within its own framework the "theoretical study of classification, including its bases, principles, procedures, and rules."[22] Also, according to Simpson, it has been defined as "the ordering of complex data."[23] Robert R. Sokal and Peter H. A. Sneath have said that the term taxonomy, like classification, has been used to "designate the end products of the taxonomic process."[24]

The development of a classification system, described later in this chapter, involved the ordering of a great deal of complex data. A number of examples where the term taxonomy has been used to refer to an end product in the field of education are also available. At least two are very similar in type to this study.[*]

As a means of further clarifying the relation of taxonomic research to this project, a review of the objectives of taxonomic study is useful. As here presented, appropriate, related library terminology has been inserted, in brackets, into a statement by George V. Lawrence. By these insertions, we can very quickly convert the language of taxonomy into the realm of librarianship and vice versa. Lawrence describes one of the objectives of taxonomic study as the "learning of the kinds of plants [jobs]. . . and their names, of their distinctions [specific knowledges, skills, and abilities required] and their affinities [similarities between jobs]."[25]

A clear picture of the applicability of taxonomic research to this study is presented by comparing the steps in this project with a list of processes which taxonomists follow. This list of George Simpson's, who was mentioned previously, is shown here in somewhat abbreviated form in parallel with comparable steps taken in this study.

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[*] Bloom, Benjamin S., ed. *Taxonomy of Educational Objectives: The Classification of Educational Goals*. *Handbook I: Cognitive Domain*. New York, David McKay Company, Inc., 1956. and, Stevens, Godfrey Daniel. *Taxonomy in Special Education for Children with Body Disorders*. Pittsburgh, University of Pittsburgh, 1966.

Table 1

COMPARISON OF THE STEPS OF THIS STUDY TO THOSE OF TAXONOMIC RESEARCH

Simpson's list of steps	Steps in this study
1. Selects organisms to to classified.	1. Collects critical incidents to be classified.
2. Observes and records data	2. Identifies the effective behaviors involved in performing the task or carrying out the activity described in incidents.
3. Sorts data into taxonomic units.	3. Formulates the main categories of the classification scheme and develops sub-classes.
4. Compares characteristics.	4. Identifies the characteristic knowledges and skills involved and assigns them to the classification.
5. Interprets relationships.	5. Analyzes curriculum content in relation to desired educational outcomes.
6. Bases inferences on interpretations.	6. Draws some inferences regarding pertinence of library education to needs.
7. Tabulates conclusions on affinities, hierarchies and divergences.[26]	7. Identifies the points of coincidence or divergence between library education and the needs of personnel.

With regard to sequence, number seven logically preceded number six in the application of these steps to this study.

It can be seen in the table just above that analysis is an integral part of taxonomic research. It was in this study as well.

2. Formulation of the Classification

An orderly classification for data collected had to be derived from the great diversity of information in a variety of terminology contained in the data collected from libraries.

Earlier in this chapter, under "Data Collection," the process of compiling a preliminary or working list was described. This list was used as a guide in recording and analyzing the data collected from the 112 librarians consulted.* As it was compiled from many sources, it contained tasks and activities which were never mentioned by librarians as being important to public service personnel. Those identified as important for public service were all that were to be considered in this study. Steps had to be taken, therefore, to eliminate the unwanted classes. This culling process can best be illustrated with the exemplary table below.

Exemplary Table 2

ASSIGNMENT OF LIBRARY DATA TO PRELIMINARY LIST
FOR THE ELIMINATION OF UNWANTED TASKS

Class # for knowledges, skills, and abilities	Code # for library from which data was collected in each class			
1.1	1	-	3	4
1.2	-	-	-	-
1.3	-	2	-	-

This example indicates that professional librarians in libraries number 1, 3, and 4 identified class 1.1 as of importance to public service librarians. Professional librarians in libraries number 2, and 4, identified class 1.3 as of importance, etc. If, as in this example, class 1.2 were never identified by any of the data collected in any library, that class was eliminated. After the classes which were never identified by any librarian as being of importance to public service librarians had been eliminated, there remained 83 tasks or activities which had to be ordered into a classification.

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*Methodology of recording data is described in Appendix 2

As the data were being sorted and standardized for this classification, rather standardized patterns began to emerge. The terminology of most professions lends an aura of uniqueness to that profession's activities. Many activities, once stripped of their terminological disguise, were of such a general nature that they could be considered applicable to many types of institutions and organizations in addition to libraries. Therefore, these general activities have usually been set up as the broad classes. There were a number of things which, if analogies were carried far enough, could have been classed other than as they were. For example, classification in libraries might be considered similar to an inventory of parts in a factory or some other type of list which is developed as a means of control. Thus it could be said that classification belongs in the category of administration. However, there was no real purpose to be accomplished in this study by carrying this logic to such extremes. Therefore, those activities which involve specialized tools, particular techniques, skills, and knowledges were considered typical of, if not unique to, librarianship and so were assigned to the librarianship category. Five major classes emerged to form the basic categories of the classification:

1. Subject Knowledge: the fund of information which would be included in a broad formal education plus that gained through an

individual's interest in continued learning and that which is gained from exposure to life and experience.

2. Environment: the complex setting in which social institutions, such as public libraries, exist. In this setting are organized groups which exert their influences on the library and its program.
3. Administration: a discipline in its own right, the basic principles of which may be applied to almost any institution.
4. Personal Traits: the traits usually attributed to a highly socially acceptable person in any situation.*
5. Librarianship: the activities, quite specialized in nature, which are typical of a library operation.

a. Development of subclasses of the classification. After the major taxonomic units or classes of this study were identified, subclasses had to be formed which were suitable to the ordering of the data collected and against which education was to be evaluated. This was done by drawing up a series of concepts and constructs.

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*Category 4, Personal Traits, are not considered the "learned" knowledges which fall within the cognitive domain and were not originally intended for inclusion in this study. However, as is often the case in service-oriented institutions they were reflected, at least indirectly, in so many descriptions of incidents that acknowledgement of their existence is hereby noted. No consideration of them in relation to educational objectives will be included in the analysis.

Fred N. Kerlinger defines concept as an expression of an abstraction formed through a generalization of particulars.[27] It can express numerous observations or characteristics. For example, the concept of "size" is an abstraction or generality for such observations as being more or less "large" or "small."

The major categories of Subject Knowledge, Environment, Administration, and Librarianship were the abstractions which had been formed through generalizing the particulars of the data collected. They were, therefore, the broadest concepts of the classification's structure.

Minor concepts as subdivisions of the major concepts were formulated from the data collected in terms of knowledges which were pertinent to the major concepts. For example, one of the points which was brought out in the data which was considered a sub-division of the major concept "Administration" was knowledge of statistical methods. "To know the principles of statistical methods," therefore, was a minor concept of the larger concept "Administration." These minor concepts were then expanded into constructs. A construct is a concept which has had additional meaning attached to it by defining it in some way. One means of defining a concept is by what is called an operational definition. These operational definitions assign meaning to or provide a means of measuring a concept by specifying the activities or operations which are connected with it.[28]

The great diversities of information in their varied terminology were the operational definitions of the concepts of this study. Another example will clarify this. "The ability to compile statistical data" is one of the operational definitions which adds meaning or provides a means of measuring the concept "to know the principles of statistical methods." Thus it can be seen that the classification, while being formulated in this way, was at the same time being developed into desirable performance proficiencies for specified tasks, or a Taxonomy of Educational Objectives for Librarians. Restated briefly, the sequence of steps in the process of formulation were:

Major Concepts formed by generalizing on the particulars of the data collected were then extended to include the specifically related knowledges as

> Minor Concepts which were expanded by the operational definitions or information collected from libraries to form
>
> > Constructs which completed the formulation of a
> >
> > > Classification which in its expanded form provided a
> > >
> > > > Taxonomy of Educational Objectives for Public Service Librarians against which appropriate library education could then be evaluated.

b. Sequence and Terminology of the Classification. The order or sequence in which the classification was devised and the terminology used varies somewhat from previous lists. Authorities agree that there is some subjectivity in the arrangement of schemes of classification. However, the methods of devising this classification, as described above, attempted to maintain as great a degree of consistency as possible without imposing unnatural and awkward restrictions merely for the sake of formalization. The idea of classification being influenced by an intention to make it useful is certainly not new or unknown to librarians for, as W. C. Berwick Sayers said, "classification schemes should be maps which guide one."[29] Similar sentiments have been expressed in other fields. In discussing the usefulness and reporting of data, John C. Flanagan stressed the fact that the preferred arrangements and categories should be those believed to be of the greatest value for the purpose.[30] Therefore, the arrangement of the classification for this study has been the sequence that offered the greatest utility for this study.

The terminology used in this classification may not be that which another writer would have chosen. However, variation in terminology and its application has been apparent over the years in librarianship. "Work with Children" was listed as a technical course at one time[31] and probably few librarians would agree with such a designation today. The job descriptions used in compiling the preliminary classification did not always use the same terms in referring to the same types of tasks. The terminology ultimately chosen for this classification, therefore, was that which was most explanatory and useful for the purposes of this study.

C. Taxonomy of Educational Objectives for Public Service Librarians

1. Identification of Levels of Knowledges, Skills, and Abilities Involved in the Classification

As mentioned at the beginning of this chapter, the second aim of this study was the analysis of appropriate curricular content and its relation to the needs expressed in this classification of educational objectives. Therefore, in order to determine if education, as it existed, was developing the levels of knowledge, skills, and abilities needed, the intellectual level of each had to be identified. This was done by assigning these knowledges, skills, and abilities to the categories of Bloom's *Taxonomy*.

The *Taxonomy of Educational Objectives; Handbook I; Cognitive Domain* is not the only work of its kind in this field. Material on educational objectives and evaluation is voluminous. But Bloom's *Taxonomy*, perhaps more concisely than any other, sets out the levels toward which educational objectives in the cognitive domain may be aimed. Therefore, it is the one which has been adopted for use in this study and followed as closely as appeared appropriate.

Bloom's *Taxonomy* listed six major categories of educational objectives in the cognitive domain which were divided into subclasses indicating different types of knowledges or skills within those categories. These are listed below.

1.00 Knowledge
    1.10 Knowledge of specifics
    1.20 Knowledge of ways and means of dealing with specifics
    1.30 Knowledge of the universals and abstractions of a field

2.00 Comprehension
  2.10 Translation
  2.20 Interpretation
  2.30 Extrapolation

3.00 Application

4.00 Analysis
  4.10 Analysis of elements
  4.20 Analysis of relationships
  4.30 Analysis of organizational principles

5.00 Synthesis
  5.10 Production of a unique communication
  5.20 Production of a plan, or proposed set of operations
  5.30 Derivation of a set of abstract relations

6.00 Evaluation
  6.10 Judgments in terms of internal evidence
  6.20 Judgments in terms of external evidence.

In applying the Taxonomy to knowledges and skills prevalent in professional public service tasks, parts of its structure needed amplification or clarification for the purposes of this study. Educators have also found changes and expansions of Bloom's Taxonomy necessary under certain circumstances. Bloom and the Committee of College and University Examiners recognized they had not "succeeded in finding a method of classification which would permit complete and sharp distinctions."[32] In making the additions for this study, the interpretations of other authorities have been drawn upon.[33] But rather than disrupt the sequence of Bloom and his associates' scheme, the additions for the purpose of clarification were made within their structure in the 1.00's and 3.00's. One entire new class (7.00) was added as is explained later in this same section.

Classes from Bloom's Taxonomy pertinent to this study are reproduced with original definitions. Cited passages are indented, single spaced, and with subheadings underlined. This writer's additions, inserted within Bloom's structure, are similarly numbered but are not indented, single spaced, nor underlined. The entire class, formulated for this study, is similarly numbered, not indented, single spaced, nor underlined. Explanatory examples of classes in library context are identified a., b., etc.

> 1.11 Knowledge of Terminology
> Knowledge of the referents for specific symbols (verbal and non-verbal). This may include knowledge of the most generally accepted symbol referent, knowledge of the variety of symbols which may be used for a single referent, or knowledge of the referent most appropriate to a given use of a symbol.[34]

Examples in library context:

a. Knowledge of the terminology of the book trade.

b. Knowledge of the terminology of cataloging.

c. Knowledge of the terminology of automation.

d. Knowledge of the terminology of the field of social sciences.

> 1.12 Knowledge of Specific Facts
> Knowledge of dates, events, persons, places, etc. This may include very precise and specific information such as the specific date or exact magnitude of a phenomenon. It may also include approximate or relative information such as an approximate time period or the general order of magnitude of a phenomenon.[35]

Examples in library context:

a. Knowledge of specialties of publishing houses.

b. Knowledge of what factors influenced the public library development.

c. Knowledge of the production capacity of card reproducing equipment.

d. Knowledge of the cultural, educational, and economic structure of the community.

e. Knowledge of the differences and similarities between two items.

In the area of knowledges there appeared a need for a category of:

1.13 Knowledge of current opinions. Perhaps this could have been recorded under "1.11 Knowledge of Terminology" or "1.12 Knowledge of Specific Facts" since Bloom defines terminology as generally representing "the conventions or agreements within a field." However, opinions and individual thinking are often not so conventionalized as is implied by "conventions or agreements." Furthermore, since opinions and individual thinking are not necessarily susceptible to testing by other means than determining unanimity (or lack of it) they are hardly what Bloom would consider "fact."

> 1.21 Knowledge of Conventions
> Knowledge of characteristic ways of treating and presenting ideas and phenomena. For purposes of communication and consistency, workers in a field employ usages, styles, practices, and forms which best suit their purposes and/or which appear to suit best the phenomena with which they deal. It should be recognized that although these forms and conventions are likely to be set on arbitrary, accidental, or authoritative bases, they are retained because of the general agreement or concurrence of individuals concerned with the subject, phenomena, or problem.[36]

Examples in library context:

a. Knowledge of the format for cataloging cards.

b. Knowledge of the form divisions by which classification numbers are developed.

c. Knowledge of the rules of filing.

d. Knowledge of cataloging rules.

e. Knowledge of the routines of reserving books.

> 1.23 Knowledge of Classifications and Categories
> Knowledge of the classes, sets, divisions, and arrangements which are regarded as fundamental for a given subject field, purpose, argument, or problem.[37]

Examples in library context:

a. Knowledge of the area encompassed by a particular classification number.

b. Knowledge of the range of types of literature.

> 1.24 Knowledge of Criteria
> Knowledge of the criteria by which facts, principles, opinions, and conduct are tested or judged.[38]

Examples in library context:

a. Knowledge of the criteria by which a reference book is evaluated.

b. Knowledge of the criteria by which to judge the physical product such as a book or a film.

> 1.25 Knowledge of Methodology
> Knowledge of the methods of inquiry, techniques, and procedures employed in a particular subject field, as well as those employed in investigating particular problems and phenomena. The emphasis here is on the individual's knowledge of the method rather than his ability to use the method.[39]

Examples in library context:

a. Knowledge of how to flow-chart the process of discharging a book.

b. Knowledge of the various ways by which a book may be acquired.

c. Knowledge of the methodologies suitable to doing a community survey.

1.31 Knowledge of Principles and Generalizations
Knowledge of particular abstractions which summarize observations of phenomena. These are the abstractions which are of value in explaining, describing, predicting, or determining the most appropriate and relevant action or direction to be taken.[40]

Examples in library context:

a. Knowledge of the principles of personnel management.

b. Knowledge of the principles of program budgeting.

2.10 Translation
Comprehension as evidenced by the care and accuracy with which the communication is paraphrased or rendered from one language or form of communication to another. Translation is judged on the basis of faithfulness and accuracy, that is, on the extent to which the material in the original communication is preserved although the form of the communication has been altered.[41]

Examples in library context:

a. The ability to recognize relationships between call numbers on materials and their content.

b. The ability to present fluctuations in circulation in a chart or graphic form.

c. The ability to translate a foreign work sufficiently to catalog it or assist a patron in using materials.

2.20 Interpretation
The explanation or summarization of a communication. Whereas translation involves an objective part-for-part rendering of a communication, interpretation involves a reordering, rearrangement, or a new view of the material.[42]

Examples in library context:

a. The ability to understand the thought of a work sufficiently to choose a satisfactory classification number (content analysis).

b. The ability to interpret content of a work to a patron.

c. The ability to interpret contradictory statements in reference works.

d. The ability to interpret the needs of various types of patrons who seek assistance.

e. The ability to identify the responsibility of authorships.

f. The ability to abstract the meaning of a work.

2.30 Extrapolation
The extension of trends or tendencies beyond the given data to determine implication, consequences, corollaries, effects, etc., which are in accordance with the conditions described in the original communication.[43]

Examples in library context:

a. The ability to predict book trends.

b. The ability to anticipate financial resources.

c. A sensitivity to factors which might influence plans for library service.

3.00 Application
The use of abstractions in particular and concrete situations. The abstractions may be in the form of general ideas, rules of procedures, or generalized ~~methods.~~ The abstractions may also be technical principles, ideas, and theories which must be remembered and applied.[44]

Some identifiable levels of difficulty in application seemed to be needed for indicating the various types of application which are inherent in library functions. Some jobs require only adherence to a routine or procedure while others require more in the way of intellectual skills. Therefore, some divisions which appeared appropriate for delineation of these differences were inserted by this author for the purposes of this study. These insertions are not indented and headings are not underlined.

3.10 Application of knowledges, rules, routines, or procedures to a given situation without modification.

Examples in library context:

a. The ability to file catalog cards according to a set of rules.

b. The ability to apply the standard form divisions of a classification system.

c. The ability to enter "see" and "see also" references in accordance with a standard list.

d. The ability to follow a prescribed routine for registering a new borrower.

e. The ability to assign a Cutter number to a book.

f. The ability to follow the routines of ordering materials.

3.20 Application of knowledges, rules, routines, or procedures to a given situation with some modification.

Examples in library context:

a. The ability to adjust a cataloging rule in accordance with a library's practice.

b. The ability to build a classification number.

3.30 Application of knowledges, rules, routines, or procedures to a given situation with some discriminative, interpretive, or evaluative judgement.

Examples in library context:

a. The ability to apply social science generalizations of a particular community to the pattern of library service.

b. The ability to employ alternate procedures in finding an answer to a difficult reference question.

c. The ability to apply principles of good personnel management to a difficult staff situation.

d. The ability to relate the Library Bill of Rights and Freedom to Read statements to the development of a library's collection policy.

e. The ability to weigh advantages of one book or course of action against another.

4.10 Analysis of Elements
Identification of the elements included in a communication.[45]

Examples in library context:

a. The ability to distinguish the reason for following an accepted procedure from rationalization that such a procedure is best.

b. The ability to recognize the motives behind maneuvers of staff, suggestions for new programs, etc.

c. The ability to identify the steps in a procedure or process such as the physical production of catalog cards.

4.20 Analyses of Relationships
The connections and interactions between elements and parts of a communication.[46]

Examples in library context:

a. The ability to recognize the factors which should form the basis for a policy decision regarding selection.

b. The ability to predict what effects make-up of a clientele will have on the patterns of use in the library.

5.10 Production of a Unique Communication
The development of a communication in which the writer or speaker attempts to convey ideas, feelings, and/or experiences to others.[47]

Examples in library context:

a. The ability to write a clear and appropriate statement of the library's policy of service.

b. The ability to prepare a library's budget for presentation to a city council.

5.20 Production of a Plan, or Proposed Set of Operations
The development of a plan of work or the proposal of a plan of operations. The plan should satisfy requirements of the task which may be given to the student or which he may develop for himself.[48]

Examples in library context:

a. The ability to propose alternate procedures for the shelving of returned books.

b. The ability to use the results of analysis in producing an effective plan for changing the acquisition procedures.

c. The ability to plan an in-service training program.

6.20 Judgments in Terms of External Criteria
Evaluation of material with reference to selected or remembered criteria.[49]

Example in library context:

a. The ability to select materials in light of identified criteria.

There was a considerable body of material not easily categorized within the six divisions of Bloom's Taxonomy, consisting of skills which enable a person to operate as an effective member in society or within an organization.[50] These skills are a type which fit neither into the affective nor the psychomotor domains and so for the purpose of this study are called "social skills." They are not strictly personality traits. If one thinks of them as being skills and abilities, the principles and theories of which can be taught, or as levels of achievement which can be measured and observed, then their differentiation from personality traits seems rather apparent. And their attachment to the cognitive domain, for the purposes of this study, appears reasonable.

Habits of conduct are influenced by identifiable personality traits such as motivational and tempermental characteristics. But, if the acquired behavior exhibited in applying a learned principle can be observed and evaluated, it has become a part of the habit pattern. For example, substantive principles of human relations can be taught, such as how to handle and deal with people, or how to supervise, train, and motivate people. These behaviors can be directly observed and measured in the social context as a part of the habit pattern, a process which has become known as sociometry.[51]

Two other examples will help to clarify how learned knowledge becomes habit. In a class on the techniques of public speaking, a great deal may be learned by the student which develops into a social skill known as the ability to make a public appearance. Or, courses are taught dealing with "marriage relationships." The instructor, in this case, is teaching the principles of human relations as they apply to the ability to function socially within a state of marriage.

Thus, the social skills, as used here, refer to those patterns of habit based on the principles of human relations as they apply to the ability to function within the social environment of one's job. These social skills could be further defined as the individual's own skills and abilities which he exhibits in the presence of people.

The things which have been classed as social skills might have been forced into the six original categories. The "handling and dealing with people" is a degree of application of the principles of social psychology and human relations. However, in view of the emphasis placed on these factors by librarians, more explicit identification was deemed desirable than could easily be accomplished through the classifications of Bloom's Taxonomy. Therefore, a seventh category was added in order to accommodate these skills and abilities of importance to professional librarians. It was numbered 7.00 and put at the end of the Taxonomy. Its location does not necessarily reflect a logical hierarchy of complexity in relation to the other six categories, nor is it here inferred that the subdivisions within the 7.00 category itself are in an irrefutable order to complexity. This category was subdivided as follows:

7.00 Social skills and abilities.

7.10 Handling and dealing with people.

Examples in library context:

a. The ability to make a timid patron feel welcome.
b. The ability to work with groups and clubs in the community.
c. The ability to maintain good working relationships with other members of the staff.

7.20 Appearing in public.

Examples in library context:

a. The ability to present a book review at a women's club meeting.

b. The ability to present the library's budget to a city council or library board.

7.30 Supervisory skill.

7.31 Training and instructing.

Examples in library context:

a. The ability to train new personnel in the duties of a particular job.

b. The ability to instruct patrons in the use of the card catalog.

7.32 Motivating personnel.

Examples in library context:

a. The ability to inspire the loyalty of employees.

b. The ability to encourage personnel to perform at peak efficiency.

7.33 Directing personnel.

Examples in library context.

a. The ability to supervise clericals doing routine tasks.

b. The ability to supervise the team of professionals working as readers' advisors.

c. The ability to direct the operations of a group of branch librarians.

7.34 Evaluating personnel.

Examples in library context.

a. The ability to discuss constructively with an employee the quality of his performance.

b. The ability to judge the suitability of a person for a particular kind of job.

7.40 Motivating the public.

Example in library context.

a. The ability to encourage persons to use the library's facilities.

2. Taxonomy of Librarianship for Public Service

It should constantly be remembered that what has been identified throughout this study is the ability which enables a person to do something based on his store of knowledge. In a job setting, it is hoped, and reasonably assumed that, more often than not, the person will make effective use of such knowledge under the proper circumstances. But assurance of such performance from the standpoint of individual characteristics or personality traits is not necessarily guaranteed even though the ability exists. The exclusion from consideration here of these personality factors which so greatly influence performance does not ignore their importance, but they are not a part of this study.

The classification of educational objectives for librarianship, which follows, does not claim to be a complete identification of all the knowledges which a professional librarian should possess. As it stands here, it contains only those concepts which were brought to the attention of the investigator by professional librarians as being particularly appropriate to the public service aspects of those working in the areas mentioned in the chapter "Limits of this Study."

The same principle was applied to the skills and abilities identified under their related knowledge. They are not an exhaustive list of all those that are identifiable in the use of such knowledge. They represent only those which were brought out in the data collected and thus were assumed to be the skills and abilities of major significance to the kind of professional performance being considered here.

An additional limitation must be recognized. All the levels of complexity involved in these skills and abilities were not individually specified in this list. On the contrary, there was usually only one identified for each ability. In each case, it represents this investigator's interpretation of what was stated or implied by the respondents in this study. Classification of the behavior was made at what appeared to be the highest level of complexity applicable within Bloom's Taxonomy under the circumstances described. Less complex and possibly inherent knowledges and behaviors which might also be involved in such performance were not isolated, as these could vary somewhat with the situation. For example, if the ability is listed at the 5.20 level, or Synthesis at the level of production of a plan, it was assumed that this could have involved some knowledges, some levels of comprehension, application, and analysis as well. It was the premise of the producers of the Taxonomy that each of the levels in their classification resembled building blocks and that the abilities they identified developed from the simple to the more complex,[52] with each one drawing upon one or more of the less complex levels below it.[53] This may not always be the case, but as this was a premise upon which the developers of the Taxonomy proceeded, it is also accepted for the purposes of this study. Even though the particular conditions of an actual and specific situation would determine exactly which of the less complex factors were involved, in this study only one category was generally assigned to each ability.

There were some exceptions to the policy of identifying only one level of skill or ability. Since a seventh category pertaining to social skills was added for the purposes of this study, there are instances in which two or more numbers are identified with each ability. This second number was deemed necessary because the 7.00 category was not a replication of skills and abilities already covered. In such cases, Bloom's most complex level, which was apparent in the given situation, was indicated and was accompanied by a class number from the 7.00 category.

This qualitative analysis produced a partial Taxonomy of Educational Objectives for Public Service Librarians against which the appropriate education which had been analyzed could be measured. It is called partial because it is not intended to indicate that this taxonomy represents all the knowledges, skills, or abilities which public service librarians should possess. By virtue of their identification by librarians these educational objectives are assumed, however, to be of importance. Also, the limitations of public service libraries should be kept in mind. If another type of duty or task had been the focus of this study, the emphasis and educational objectives would possibly have been considerably different. Throughout the remainder of this study this will generally be referred to as the Taxonomy of Librarianship and it is presented below.

TAXONOMY OF LIBRARIANSHIP FOR PUBLIC SERVICE LIBRARIANS

The numbers without parentheses designate the main categories of the Taxonomy of Librarianship and the educational objectives. The numbers in parentheses designate the class of intellectual skill in Bloom's Taxonomy which is appropriate.

1. Subject knowledge
To be knowledgeable in a variety of subjects.

(1.12) Knowledge - specifics:

The fund of knowledge which would be included in a broad formal education plus that gained through an individual's interest in continued learning and that which is gained from exposure to life and experience. This was also described during interviews as "good subject background" and "good liberal arts education." Since public librarians are required to use, and help patrons use, materials which may cover the whole range of knowledge, a great variety of topical areas may come into play and would, of course, call for some knowledge of the nature of the field, its significant people and developments.

1.1 To know the interrelations among subject fields.

(1.12) Knowledge - specifics:

Based upon general subject knowledge, knowing the peripheral and overlapping relations between such fields as chemistry and bio-chemistry, art and architecture, etc.

(4.20) Analysis - relationships:

The ability to recognize the subject matter which is common among disciplines and which would be helpful in the control and utilization of recorded information in libraries.

The ability to understand historical and sociological relationships to the development of libraries.

1.2 To know one or more subject areas in some depth.

(1.12) Knowledge - specifics:

Knowledge beyond that implied by a "speaking acquaintance" with a subject, that which would be comparable to that knowledge gained by a college minor or more. More familiarity with the specific terminology would be assumed than would be expected at the levels of subject knowledge previously mentioned.

(2.20) Comprehension - interpretation:

The ability to comprehend the subject content and meanings of works which are above the introductory or beginning layman's level of difficulty.

(3.30) Application - with judgment:

The ability to apply this knowledge of a subject area to the control and use of library materials such as might be required in cataloging highly technical reports or aiding a patron doing serious research.

1.3 To know the general terminology of many fields.

(1.11) Knowledge - terminology:

This refers to the commonly used jargon of an area which might be referred to as a "speaking acquaintance" in a subject or a profession and does not include the terminology of the specialist. It would, however, cover the broad range of humanities, social and natural sciences. It would also cover the terminology in a number of fields which, while librarianship is not the basis of its origin, has been adopted by librarianship. Some of these are closely related, others are not so closely related. For example, many of those from the printing and publishing trade are an integral part of books and bibliography. Terminology referring to types of material such as "microforms" and "patents," if not considered strictly a part of librarianship, is certainly related. Some which have been taken from the educational field such as "comprehension level" and other similar examples have been almost as completely adopted into the vocabulary of the profession. More and more, the terms associated with data processing and the computer sciences, administrative management, etc. are being adopted as librarianship's own.

(2.10) Comprehension - translation:

The ability to represent a process by a flow-chart.

(2.20) Comprehension - interpretation:

The ability to interpret a flow-chart.

The ability to read with a general level of understanding about a subject in a broad range of humanities, social and natural sciences.

The ability to use and understand this terminology in many fields sufficiently well to interpret the needs of patrons and to convey the needs of the library to others.

The ability to understand the meanings and limitations of such referents as "O.P." for out of print, "hardware" as a general term for computers and other equipment, etc.

(5.10) Synthesis - unique communication:

The ability to use the terminology of many subject fields effectively in communicating with the public.

1.4 To have some knowledge of foreign languages.

(1.23) Knowledge - classifications and categories:

Knowledge of the structure of language families.

(2.10) Comprehension - translation:

The ability to translate (with or without a dictionary) foreign language titles, bibliographies, and annotations well enough to reflect accurately their general meanings.

1.5 To know symbolic representations of languages and other graphic information.

(1.12) Knowledge - specifics:

Knowledge that there is a variety of alphabets, and that information can be recorded in more than one symbolic form such as acronyms, alphabets other than Roman, etc.

(2.10) Comprehension - translation:

The ability to transliterate from one alphabet to another, such as the Cyrillic to the Roman.

The ability to translate the meanings of acronyms.

The ability to translate tables, charts, graphs, illustrations, read an architectural drawing, and read musical notation.

(3.10) Application - without modification:

The ability to arrange information in a prescribed sequence such as that used in filing and searching.

1.6 To know literature.

(1.12) Knowledge - specifics:

Broad knowledge of literature; literature is given a wide interpretation including all kinds of recorded information of a subject area; a knowledge of outstanding writers in many fields.

(1.23) Knowledge - classifications and categories:

Knowledge of types of literature. This is not the same as knowing a collection of a specific institution which is covered in a later section.

(2.20) Comprehension - interpretation:

The ability to understand the theme of a work.

(3.30) Application - with judgment:

The ability to judge a book's usefulness for a certain purpose.

The ability to recognize various forms and types of literature such as poetry, fiction, drama, etc.

2. Environment.
To know the general social environment within which the public library operates.

(1.12) Knowledge - specifics:

Knowledge of the complex social environment within which the library exists. In the broader sense, this environment includes the universe; in a narrower sense, it is the clientele of the library, the community's social and political structure, as well as other organizations and institutions within this community structure. The aspects of this are discussed below specifically in terms of the factors which affect the library and what librarians must know to work within the community.

2.1 To know the role of the library in the community.

(1.13) Knowledge - prevailing opinions and philosophy:

Knowledge of the prevalent philosophies regarding the purposes and responsibilities of public library service.

(2.30) Comprehension - extrapolation:

A sensitivity to environmental factors which indicate the approach a library service should take in keeping with society's needs.

(3.30) Application - with judgment:

The ability to relate the library's program to the desires and needs of the environment.

The ability to implement a program once it is planned.

(4.20) Analysis - relationships:

The ability to analyze the factors and relationships which are of major significance in the planning of a library's program of service.

(5.20) Synthesis - production of a plan:

The ability to develop an overall plan after the complex needs of the library's society have been identified and analyzed.

2.2 Knowledge of patrons' attitudes toward the library as a service institution.

(1.13) Knowledge - opinions:

Knowledge, as nearly as can be judged from expressions of patron opinion and observation of patron reaction, whether or not the library is providing the service desired. (It is not intended to imply here that this is a true measure of the adequacy of service, for that is indeed another problem beyond the scope of this study.)

(4.20) Analysis - relationships:

The ability to analyze patron reaction to service for the purpose of identifying the strengths and weaknesses of a library's program.

(5.20) Synthesis - production of a plan:

The ability to incorporate into the library's programs the desires and needs as implied through patron attitudes.

2.3 To know the political structure of the community as related to a public library.

(1.12) Knowledge - specifics:

Knowledge of the public library's inextricable connection with the political organization of a community. By definition a public library is dependent upon the tax and political structure for its very existence. This involves knowing how the governmental and organizational structure, of which the library is a part, operates and functions.

(3.30) Application - with judgment:

The ability to use this knowledge of the political structure to the maximum benefit toward the library's development.

(3.30) Application - with judgment:
(7.10) Social skill - working and dealing with people:

The ability to establish a place of acceptance for the library within the existing political structure of the community. This is often described as "know how" or could be termed the ability to operate within the community's structure.

2.31 To know the power structure of a community.

(1.12) Knowledge - specifics:

Knowledge of the multiplicity of power structures that may exist in a community. It is often the powers behind the official scene with which the librarian may find it necessary or worthwhile to deal.

(3.30) Application - with judgment:
(7.10) Social skill - handling and working with people:

The ability to utilize factors and people within this power structure for the development of the library and its resources.

The ability to promote the library's welfare through contacts at all levels of influence.

2.4 To know the clientele which makes up the community.

(1.12) Knowledge - specifics:

Knowledge of how both the actual and potential clientele of a community vary. "Clientele" is intended to refer to all those entitled to service either as residents of a particular urban area or peripheral areas to which service is extended through a branch, contract, or other type-of-service system.

(4.20) Analysis - relationships:

The ability to predict what demands will be exerted upon the library by the various groups within the community.

The ability to relate the programs and services of the library to such characteristic group influences as nationality and age as well as to the cultural, economic and educational levels, and reading interests of the community and library's clientele.

2.41 To know the problems of modern urban society.

(1.12) Knowledge - specifics:

Knowledge of clientele changes and population shifts which may have far-reaching effects on the large urban public library. Demands on the collection may be altered, and some new approaches to services may be indicated.

(2.30) Comprehension - extrapolation:

A sensitivity to shifts in population and its effects upon the library's services.

(4.20) Analysis - relationships:

The ability to adapt the library's services and collections to a changing environment such as population shifts, changes in economic status of the clientele, etc.

2.5 To know the happenings within an environment.

(1.12) Knowledge - specifics:

Knowledge of the current events of the library's total environment with emphasis on the cultural, educational, and technological concerns of a given clientele.

(2.30) Comprehension - extrapolation:

A sensitivity to trends and events which will affect the use of a library.

(4.20) Analysis - relationships:

The ability to predict the demands that current events will exert upon a library's services, programs and collections, and the ability to operate accordingly.

2.6 To know about the other institutions and organizations within a community.

(1.12) Knowledge - specifics:

Knowledge of the programs of the educational institutions within the community. Their programs may create a considerable portion of the demands which are made upon the library. Some of these can be considered as a determinant of reading interest which is mentioned previously. Historical societies, museums, and other institutional libraries such as those of industry, not only influence demand, but offer avenues of cooperation to eliminate duplication and coordinate specialization of collections. Since most of the potential value of these contacts depends on individual relationships, it must be recognized that acquaintance with people in these organizations and institutions cannot be ignored.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to use intelligently the resources of the community and cooperate with other institutions and their employees to augment the public library's own collections and to make better service possible.

2.7 To know who are the library supporters in a community.

(1.12) Knowledge - specifics:

There are those in some communities who will be financial supporters of the library apart from their participation in regular tax support, etc. They are often people who are interested in a particular collection or subject area and may, at times, contribute either money or materials. There are also individuals and groups in a community willing to support the library in other ways. Often, organized as "Friends of the Library," they can help promote a library's interest and defend the institution in times of crisis.

(5.10) Synthesis - unique communication:
(7.10) Social skills - handling and dealing with people:

The ability to present a program or a problem to those whose support may be solicited.

The ability to elicit support for the library and its policies, through the application of good public relations techniques.

The ability to establish public confidence in the value of public library service.

3. Administration
To know the principles and functions of administration.

(1.31) Knowledge - principles and generalizations:

Knowledge of the accepted principles of good administrative and operational practices which are extremely important to the efficient operation of any organization. The factors with which administration concerns itself are listed differently by different authorities but the topics generally included by most are basically the same even though the terminology used and arrangements vary. These functions of management are discussed individually in the following paragraphs.

3.1 To know the techniques of planning and the implications of implementation which may exist in any proposed change or revision of an existing plan or operation.

(1.25) Knowledge - methodology:

Knowledge that there are certain processes and sequences which must be part of the development of any plan, whether it be a long-range plan of services or the identification of steps in a simple procedure.

(1.12) Knowledge - specifics:

Knowledge that adjustments may be required and problems may arise related to personnel, equipment, resources, and production requirements.

(3.30) Application - with judgment:

The ability to follow logical sequences and establish priorities.

The ability to follow through and exercise the necessary checks, including periodic reassessments and reevaluations as a plan proceeds.

(4.20) Analysis - relationships:

The ability to recognize the importance of timing to the success of a program.

The ability to evaluate a proposed change on the basis of its implications with regard to the interrelations of people, the work involved, the value to be gained, etc.

(5.20) Synthesis - production of a plan:

The ability to foresee trends, anticipate problems and devise a workable plan for a situation which will provide optimum improvement with a minimum of disruption and difficulty.

(3.30) Application - with judgment:
(7.34) Social skills - supervisory skill - evaluating personnel:

The ability to schedule and allot jobs to appropriate personnel.

3.2 To know the techniques of the decision-making process:

(1.25) Knowledge - methodology:

Knowledge of the techniques and processes involved in the formulation of decisions and the establishment of policy.

(3.30) Application - with judgment:

The ability to follow a consistent policy in the face of unwarranted pressures.

(4.20) Analysis - relationships:

The ability to recognize the need for a formalized policy.

The ability to judge the importance of factors to be considered in a decision-making process.

(5.10) Synthesis - unique communication:

The ability to establish appropriate policies and make decisions when provided with sufficient background to place the problem in its proper perspective.

3.21 To know the policies of an individual institution.

(1.12) Knowledge - specifics:

Knowledge of the policies designed to cope with a particular set of circumstances. Since, hopefully, they are under frequent review with regard to their appropriateness, they will not only vary between institutions but will also vary within one institution from time to time.

(3.30) Application - with judgment:

The ability to reconsider and weigh policy in light of changing circumstances or special situations.

3.3 To know the principles of budgeting and the uses of budgetary planning.

(1.31) Knowledge - principles and generalizations:

Knowledge of the principles of both long- and short-range budgetary planning and of the types of budgets suitable to various types of institutions.

(3.30) Application - with judgment:

The ability to prepare a program budget which will reflect the real needs and purposes of the institution.

3.4 To know patterns of organizational structure, especially those which are suitable to libraries.

(1.12) Knowledge - specifics:

Knowledge of the types of organizations that are recognized as administratively sound under given circumstances and limitations. Within the general categories of organizational structure there are characteristics more typical of libraries than others. The current trends toward the development of systems of libraries make it even more important for the librarian to know something of organizational structure in connection with such a concept.

(4.20) Analysis - relationship:

The ability to recognize desirable and undesirable relationships in a structure of organization.

3.41 To know, within a particular institution, not only the formal organizational structure and lines of authority, but also the actual structure under which the library operates.

(1.12) Knowledge - specifics:

Knowledge of the informal organizational structure, which may in reality be more effective and widely used than the formal one.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to operate within a particular formal and informal structure.

3.42 To know, in addition to the formal and informal lines of authority, the authority and responsibility vested in many jobs in the library.

(1.12) Knowledge - specifics:

Knowledge of what general duties and responsibilities are vested in most of the jobs in the organization and who reports to whom.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to respond appropriately to authority and to operate effectively within a structure.

3.43 To know the relationships of the work of one department to the work and operation of others.

(1.12) Knowledge - specifics:

Knowledge that the processes, products and problems of one department can seldom be considered in isolation from other departments, especially where movement of work from one department to another is involved.

(4.20) Analysis - relationships:

The ability to recognize the relationships between one operation and its related functions within the total library operation.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to operate within a structure through maintenance of good inter-departmental relations.

3.44 To know the responsibilities and authority with which a specific position is entrusted and how it fits into the entire function of the organization.

(1.12) Knowledge - specifics:

Knowledge on the part of the job occupant as to precisely what his particular job entails.

(4.20) Analysis - relationships:

The ability to understand the interrelationships of the job activities within an institution.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to operate within a structure for the satisfactory performance of a particular job.

3.45 To know where to turn for assistance.

(1.12) Knowledge - specifics:

Knowledge of the specific skills of other personnel within the organization, as well as those available in outside institutions.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to utilize available personnel for the provision of the best possible service.

3.5 To know the techniques of research, analysis, and systematic inquiry.

(1.25) Knowledge - methodology:

Knowledge of the techniques which may be applied to analysis and logical thinking.

(2.20) Comprehension - interpretation:

The ability to understand the purposes and possible applications of systematic analysis.

(4.20) Analysis - relationships:

The ability to analyze situations and problems, to distinguish the significant from the insignificant factors, and to see a problem in its entirety.

(5.20) Synthesis - production of a plan:

The ability to plan a program of public service.

3.51 To know the routines and procedures of a particular operation or institution.

(1.12) Knowledge - specifics:

Knowledge of practices and procedures which have been developed for handling a particular library's day-to-day functions.

(3.10) Application - without modification:

The ability to follow prescribed routines and procedures.

(4.20) Analysis - relationships:

An understanding of how work moves in an organization.

3.52 To know which are the tried and proven applications of machines and equipment to the automation of specific library procedures as well as what new applications are presently being tested.

(1.12) Knowledge - specifics:

Knowledge of what library operations these machines are and are not capable of doing.

(2.30) Comprehension - extrapolation:

The ability to understand what types of jobs may appropriately be automated and which still require human intellect, and to foresee possible application to library processes.

(5.20) Synthesis - production of a plan:

The ability to develop a plan in cooperation with machine and systems people for the use of machines in library processes.

3.6 To know the principles of statistical methods.

(1.21) Knowledge - conventions:

Knowledge of simple statistical manipulations as well as definitions of the more common terms. Included is a knowledge of the techniques of compiling some of the more generally used types of charts, graphs, etc.

(5.10) Synthesis - unique communication:

The ability to compile statistical data from recorded information and to present them in an understandable and meaningful format.

3.7 To know some of the principles of effective communication.

(1.31) Knowledge - principles and generalizations:

Knowledge of the major principles of communication theory. This also involves the principles of organization, preparation, and presentation of communications. Inherent in effective communication are knowledges of the conventions of spelling, the techniques of writing, the rules of grammar and punctuation, and the principles of oral presentation.

(5.10) Synthesis - unique communication:

The ability to prepare and present an effective message in a form suitable to its content, purpose, and receiver.

3.71 To know the internal channels of communication within a specific library.

(1.12) Knowledge - specifics:

Knowledge of the informal as well as formal channels of communication. Included in the formal structure are staff meetings, advisory notices, manuals of operation, reports, recommendations, etc.

(5.10) Synthesis - unique communication:

The ability to establish and utilize the available internal channels of communication for keeping the staff and governing authorities of an organization satisfactorily informed.

3.72 To know the principles of public relations as well as the external channels of communication open to a library.

(1.31) Knowledge - principles and generalizations:

Knowledge of the principles of public relations. Every patron contact is, in fact, an external communication. Included is knowledge of some of the techniques of planning and presentation to clubs, as well as over radio and television. Some of the techniques of propaganda and advertising are also valuable knowledge for working with other media of communication, such as newspapers, other publications, etc.

(5.10) Synthesis - unique communication:
(7.10) Social skills - handling and dealing with people:

The ability to foster and maintain good public relations.

The ability to explain the policies of the library to the public.

(3.30) Application - with judgment:
(7.20) Social skills - appearing in public:

The ability to make a public appearance, present a program, give a book review, participate in a television or radio program, either as a public service or as a means of acquainting the public with the library's programs and services.

3.8 To know the criteria and standards which are generally accepted with regard to the library's physical plant.

(1.24) Knowledge - criteria:

Knowledge of the standards of lighting, size of building in relation to clientele, material capacity for certain types of construction and and equipment, amounts of space desirable for specific operations, arrangements of certain operations, desirable locations, etc. which can serve as guides in the planning of quarters. A knowledge of the principles of aesthetic appeal is also important.

(6.20) Evaluation - against criteria:

The ability to plan an area or an entire building for maximum utilization of space, which will be functional and at the same time create an appealing atmosphere to patrons.

3.9 To know the principles of social psychology and human relations.

(1.31) Knowledge - principles and generalizations:

Knowledge of how to work with both patrons and personnel.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to handle people, consider all viewpoints, work out a compromise, and conceal personal feelings and opinions when appropriate.

3.91 To know some of the principles of learning theory and the elements of supervision.

(1.31) Knowledge - principles and generalizations:

Knowledge of learning theory so that the librarian may better instruct the patron in the use of facilities after his needs have been identified. Knowledge of the techniques of supervision is important to proper functioning in a professional position. For, even after personnel are considered to be adequately trained, there remain considerable supervisory responsibilities over all but a very few positions.

(5.20) Synthesis - production of a plan:

The ability to plan a unit of instruction for the teaching of library practices.

(7.31) Social skills - supervisory - training:

The ability to demonstrate a routine or procedure either to a patron or employee.

The ability to instruct and supervise personnel or revise another employee's work.

3.92 To know the principles of personnel management.

(1.31) Knowledge - principles and generalizations:

(7.32) Social skills - supervisory - motivating personnel:

The ability to recognize and develop potential in personnel.

(3.30) Application - with judgment:
(7.34) Social skill - supervisory - evaluating personnel:

The ability to evaluate performance objectively, and to discuss shortcomings constructively.

3.921 To know the principles and techniques of delegating authority.

(1.31) Knowledge - principles and generalizations:

Knowledge of the problems and pitfalls of delegation without adequate authority.

(3.30) Application - principles with judgment:

The ability to delegate authority and responsibility.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to respect authority and responsibility once they have been delegated.

3.922 To know the techniques of developing personnel loyalty to the administration and maintaining good morale among personnel.

(1.31) Knowledge - principles and generalizations:

Knowledge of the importance of developing attitudes such as cooperation, loyalty and _esprit de corps_ within an organization.

(3.30) Application - with judgment:

The ability to act according to an objective personnel evaluation without discrimination with respect to sex, race, or age.

(7.10) Social skills - handling and dealing with people:

The ability to discipline staff objectively and fairly.

The ability to develop and maintain good personnel relations.

Knowledge that the principles of personnel management are not limited to the hiring of personnel but extend to its effective use in carrying out the functions of the organization.

(3.30) Application - with judgment:

The ability to select and assign personnel so that the purposes of the institution are accomplished in the most efficient way possible. There are many sub-factors involved which are discussed in the following paragraphs.

3.93 To know the requirements of specific jobs within an institution.

(1.12) Knowledge - specifics:

Knowledge of the activities to be performed within the library's functions as a service institution.

(4.20) Analysis - relationships:

The ability to judge the work involved in a particular task.

The ability to judge how much work an employee may be expected to do.

The ability to equate assignment of personnel with the peaks and valleys of work loads.

(3.30) Application - with judgment:
(7.34) Social skills - supervisory - evaluating personnel:

The ability to evaluate training, abilities and aptitudes of personnel in relation to the requirements of a particular job.

3.931 To know the level of performance which can be expected in connection with a specific job.

(1.12) Knowledge - specifics:

In production-type jobs there are general standards regarding the amount of work an employee may be expected to accomplish. Personal attitudes and traits must also be judged in evaluating personnel performance.

(3.30) Application - with judgment:

(4.20) Analysis - relationship:

The ability to support staff in the face of undue abuse or pressures.

(3.30) Application - with judgment:
(7.32) Social skill - supervision - motivating personnel:

The ability to elicit the staff's confidence in the administration.

3.932 To know the problems and techniques of labor negotiation and arbitration.

(1.31) Knowledge - principles and generalizations:

Knowledge of the fundamentals involved in labor relations. Real expertise is not expected.

(3.30) Application - with judgment:
(7.10) Social skill - handling and dealing with people:

The ability to negotiate with unions, civil service boards, etc. for the most advantageous arrangements for all concerned under given circumstances.

3.94 To know of the contributions which can be made to librarianship by other professions.

(1.12) Knowledge - specifics:

Knowledge of the specialized professions upon which librarians may draw for expertise in the operation of the library.

(4.20) Analysis - relationships:

The ability to recognize the desirability of using professionals from other fields.

(3.30) Application - with judgment:
(7.10) Social skills - handling and dealing with people:

The ability to work with these experts toward the best interests of the library and its patrons.

5. Librarianship.
To know of those operations which, as mentioned in the discussion on category formulation, are considered unique to librarianship.

(1.12) Knowledge - specifics:

Knowledge of the language of librarianship and the activities involved, such as selection, acquisition, control and use of library materials, etc. The appropriate subdivisions are considered in the following discussions.

5.1 To know the language of librarianship.

(1.12) Knowledge - specifics:

Knowledge of more than mere terminology. This category includes a knowledge of the important people, places, institutions, literature, significant events of the profession, its organizations, etc.

(4.20) Analysis - relationships:

An understanding of the influnces of significant events, people and specific institutions to library development and current practices.

5.2 To know prevailing opinions with respect to the purposes of a public library.

(1.13) Knowledge - opinions:

Knowledge of the generally accepted attitudes with regard to the purposes of public libraries. Even though there is no one philosophy which is wholly accepted, it is well to know of them before one's own attitude can be formulated with regard to whether that role should be active or passive, educational or strictly recreational, uplifting or submissive to demands, or somewhere in between these dichotomies.

5.21 To know who are and who are not library users.

(1.12) Knowledge - specifics:

Knowledge of the findings of studies on who uses the American public library is important as background for the development of a program of services.

(5.20) Synthesis - production of a plan:
(7.40) Social skills - motivating the public:

The ability to develop a program suitable to the apparent needs of the non-user which will encourage the use of the library and its facilities.

5.4 To know the importance of a collection-building policy for a library.

(1.12) Knowledge - specifics:

Knowledge of the difference between a collection-building policy and a selection policy. Both are affected by fiscal limitations and the environment but, for purposes of this discussion, the collection-building policy refers to the decisions with regard to types of material which will be collected, the depth in which certain subjects will be covered, etc. The collection-building policy reflects the attitude toward the matter of balance versus demand. Selection, on the other hand, may be considered the implementation of the collection-building policy.

(3.30) Application - with judgment:

The ability to implement the intent of the collection-building policy of the institution with respect to coverage and content.

5.41 To know that public libraries must be selective in the collection and retention of materials.

(1.12) Knowledge - specifics:

Knowledge that there are limitations on the growth of a library's collection imposed by budget, physical facilities, and the library's collection policy.

Knowledge of the problems of duplication and weeding.

(1.24) Knowledge - criteria:

Knowledge of the general standards against which library materials of all kinds are judged.

(6.20) Evaluation - against criteria:

The ability to evaluate materials in terms of quality and suitability and at the same time to apply other restrictive factors such as clientele, budget allotments, library facilities and policies.

5.42 To know standards for judging the quality of presentation in a work.

(1.24) Knowledge - criteria:

Knowledge that quality of presentation can refer to a variety of things, depending upon the kind of work, such as the literary value of a book, the artistic quality in a film, etc.,as well as knowledge of those related criteria.

(6.20) Evaluation - against criteria:

The ability to judge literary quality and value in writing; to evaluate the quality of a script or the techniques of presenting a film; to evaluate voice and musical recordings.

5.43 To know the sources of information which are available as guides in selection of materials.

(1.12) Knowledge - specifics:

Knowledge of the two primary types of guides which aid in the selection process. The first is the enumerative type such as advertisements, publishers' and dealers' announcements and catalogs. The second type offers evaluative judgments made by people in the field of literature and libraries.

(3.30) Application - principles with judgment:

The ability to use these tools for the development of the desired collection.

5.5 To know the sources of materials.

(1.12) Knowledge - specifics:

Knowledge of the specializations of publishers, jobbers, suppliers, and dealers of various kinds, representing the complete range of possible sources of library materials as well as the kinds of service which may be expected from each.

(3.30) Application - principles with judgment:

The ability to assist patrons seeking information regarding materials.

5.51 To know the vagaries of availability.

(1.12) Knowledge - specifics:

Knowledge of the characteristics of production and distribution such as the practices of remaindering, seasonal variations, etc. which affect acquisition of materials.

Other facts of interest here are the continuum and timing from author through production to the reader. Economic factors also influence publishing, which in turn determines what is made available. Libraries have an effect on the publishing field. Federal aid to libraries has influenced the kinds of publishing that may be emphasized.

(4.20) Analysis - relationships:

The ability to anticipate a work's popularity so that it may be acquired while readily available.

5.52 To know the tools of bibliographical searching.

(1.12) Knowledge - specifics:

Knowledge of the tools used for verifying citations as may be required during the acquisition of materials as well as in the processes of bibliographical control and use of materials.

(3.30) Application - with judgment:

The ability to do bibliographical searching and verification of information necessary in control and use of materials.

5.53 To know the techniques for finding particular kinds of information.

(1.12) Knowledge - specifics:

Knowledge of the value of a systematic approach when looking for material or information. The term "search strategy" is being used more and more in connection with this activity, due probably, to the influences of mechanization of information storage and retrieval.

(3.30) Application - with judgment:

The ability to conduct a search in a manner likely to produce the desired results, with the least expenditure of time and effort, and knowing when a search is probably futile.

5.54 To know the various kinds of materials that are available for acquisition.

(1.12) Knowledge - specifics:

Knowledge of the non-book media. Although collections in large public libraries still consist predominately of books, libraries no longer limit themselves to the acquisition of this traditional form of recorded information.

(3.30) Application - with judgment:

The ability to select from the great variety of materials that are available to a modern library those which are suitable to the development of the library's collection.

5.6 To know the philosophy and purposes of descriptive cataloging.

(1.12) Knowledge - specifics:

Knowledge of the prevailing rationale that some means of control is needed which provides access from a bibliographical approach.

(2.20) Comprehension - interpretation:

An understanding of the purposes which descriptive cataloging should serve.

5.61 To know the principles of cataloging.

(1.12) Knowledge - specifics:

The term "control" in itself designates a a degree of regulation through rules. Librarians must have some knowledge, not only of the accepted codes that exist, but also of the rules within those codes providing a standardization of entry for works sharing similar concepts of authorship.

(2.20) Comprehension - interpretation:

The ability to understand the concept of authorship and responsibility for a work.

An understanding of the various kinds and purposes of entries.

The ability to identify the entries which should be made to reflect the subject of a work.

(3.30) Application - with judgment:

The ability to distinguish meaningful information of clues which lead to the identification of source of responsibility for a work.

5.611 To know the terminology of bibliographic control.

(1.11) Knowledge - terminology:

Knowledge of the terms which are typical of cataloging, classification, subject headings, and other processes of bibliographical control.

(2.10) Comprehension - translation:

The ability to comprehend these correctly in the use and production of bibliographical citations.

5.612 To know the adaptations of cataloging rules and other cataloging practices in an individual institution.

(1.12) Knowledge - specifics:

Knowledge of the cataloging practices of the institution in which one works. As cataloging codes have been revised over the years some libraries have adjusted their practices to coincide with these revisions. Others have altered the codes in keeping with their previous and individual practices.

(2.20) Comprehension - interpretation:

An understanding of the types of entries used in a particular library's catalog.

5.613 To know the uses of information which is recorded in a bibliographical notation.

(1.12) Knowledge - specifics:

Knowledge that the information recorded can be of value in locating an item, as a source of information about a particular item, or as a lead to other items.

(2.20) Comprehension - interpretation:

To understand the meaning of "see," and "see also" references, tracings, and other informational items.

(3.30) Application - with judgment:

The ability to utilize the information in a bibliographical notation for the purposes of interpreting its content, its meaning, its source of responsibility, etc. as well as a means of locating the work itself.

5.614 To know the kinds of information which are and are not cataloged in the conventional sense in a given institution, and if they are not cataloged, what means have been initiated for their control.

(1.12) Knowledge - specifics:

Knowledge of the library's policy with regard to cataloging of government documents, pamphlets, serials and series, etc. The bibliographical control of such items as subject collections is an example of other possible variations.

(2.20) Comprehension - interpretation:

An understanding of the system or systems used in a particular library for the control of uncataloged materials.

5.615 To know the various kinds of library catalogs.

(1.12) Knowledge - specifics:

Knowledge of the variety of formats which a library's catalog may take such as "card," "book," etc. There may also be variety in arrangement such as "classed" and "alphabetical," as well as variety which indicates limitations of inclusion such as a divided catalog containing only author or subject.

(3.30) Application - with judgment:

The ability to judge the merits of each type of catalog in light of the access and control it should provide, ease of patron use, etc.

5.62 To know the structure of specific classification schemes.

(1.12) Knowledge - specifics:

Knowledge of the prevalent opinion that there is a need for a subject approach to material.

(2.20) Comprehension - interpretation:

An understanding of the purposes which library classification should serve.

5.621 To know the structure and adaptations of the classification system used in a particular library.

(1.12) Knowledge - specifics:

Knowledge of the system in use in a particular library. Although a unique system is not common among large public libraries, some follow their own adaptations of various systems, in which case strict adherence to a published system is impossible.

(1.23) Knowledge - categories:

Knowledge of the classification numbers for the main subject divisions.

(3.30) Application - relationships:

The ability to use one's knowledge of classification numbers in the search of material or information.

5.63 To know the purposes and principles of subject headings and indexing.

(1.12) Knowledge - specifics:

Knowledge of the utility of subject headings and index entries as a means of access to materials and information.

(2.20) Comprehension - interpretation:

An understanding of the purposes of subject headings and indexing.

5.631 To know the forms and conventions by which subject headings are divided.

(1.23) Knowledge - categories:

Knowledge of standard forms of division and expansion which are applied in using the accepted lists of subject headings.

(3.20) Application - with modification:

The ability to apply these characteristics of a system of subject headings to a particular library situation.

(5.20) Synthesis - develop a plan:

The ability to devise a thesaurus, index, or system of subject headings for a special collection or particular kind of file, such as pictures, clippings, etc.

5.64 To know something about the standard systems of filing; to know the rules of the system in force in a given situation.

(1.21) Knowledge - conventions:

Knowledge of the filing rules of these various systems.

(3.10) Application - without modification:

The ability to do filing in accordance with a designated system.

The ability to locate information arranged in a prescribed sequence.

5.7 To know the techniques of descriptive annotating and reviewing.

(1.21) Knowledge - conventions:

Knowledge of the differences of content which are reflected in different types of annotations and reviews. As the name implies, "descriptive" ones are aimed at describing content.

(5.10) Synthesis - unique communication:

The ability to comprehend the intent of an author and to convey the meaning in a condensed form.

5.71 To know the techniques of critical annotation and reviewing.

(1.21) Knowledge - conventions:

Knowledge of the type and extent of content typical of critical annotations and reviews. Although they have many of the characteristics of descriptive ones, they also include the element of evaluation.

(6.20) Evaluation - against criteria:

The ability to present the content of a work concisely in evaluative terms and in light of the intent of the author.

5.72 To know the techniques of storytelling.

(1.12) Knowledge - specifics:

Knowledge of the mannerisms, voice modulation, and kinds of presentations that appeal to children.

(5.10) Synthesis - unique communication:
(7.20) Social skill - public appearance:

The ability to tell a story in keeping with its original feeling and story in a way that will appeal to the audience.

5.73 To know the techniques of presenting book talks and reviews.

(1.12) Knowledge - conventions:

Knowledge of the techniques of oral presentation in conjunction with some of the same basic techniques of abstracting and annotating.

(5.10) Synthesis - unique communication:
(7.20) Social skill - public appearance:

The ability to prepare and then present a book talk or book review before an audience.

5.8 To know something of the frequency of use of library materials.

(1.12) Knowledge - specifics:

Knowledge of the factual information which is available with regard to use of library materials. Research in this area has tended to emphasize who the patrons are and how much they use the library rather than what materials they use or how they use them. However, there are some general observations of frequency of use of various classes and types of materials upon which one may base judgments as to desirable physical arrangement for materials.

(3.30) Application - with judgment:

The ability to judge suitable physical locations for certain kinds of subject-matter materials in keeping with space limitations and what is known about their use.

5.81 To know the processes and problems involved in the physical control of materials.

(1.25) Knowledge - methodology:

Knowledge of the processes of circulation control, control of exits, retrieval of overdue books, preservation, etc.

(3.10) Application - without modification:

The ability to exercise the necessary controls over materials for accountability and conservation.

(3.30) Application - with judgment:
(7.33) Social skill - directing personnel:

The ability to supervise personnel in the processes of physical control.

5.9 To know the kinds of service that a library may render to its public.

(1.12) Knowledge - specifics:

Knowledge that services vary with the institution and the needs of the community. They may include advisory and reference services, program planning for organizations, services to encourage the non-library user, efforts to help the patron to help himself, as well as services of other types.

(5.20) Synthesis - production of a plan:
(7.10) Social skill - handling and dealing with people:

The ability to design and execute a policy of service and implement a library program which is appropriate to the current and anticipated needs of the library's community and individual patrons.

(5.20) Synthesis - production of a plan and set of operations.
(7.10) Social skills - handling and dealing with people:

The ability to provide a service such as that of a reference librarian or reader's advisor in response to a patron's particular request.

5.91 To know that patrons do not or cannot always make their wishes clearly known.

(1.12) Knowledge - specifics:

Knowledge that either through lack of ability to express themselves or through a desire not to reveal their intent, patrons often do not phrase their requests in a direct and meaningful way.

(3.30) Application - with modification:
(7.10) Social skills - handling and dealing with people:

The ability to query a patron tactfully to determine the type and scope of information desired.

5.92 To know the literature and other forms of material which are represented in the library's collection.

(1.12) Knowledge - specifics:

General knowledge of the scope of subjects covered in the library's collection, the depth in which subjects are covered, specific authors and titles as well as the guides, indexes and special types of collections which exist in a particular situation. The librarian should also be knowledgeable with regard to sources which are used in the identification of topics, such as special dictionaries, encyclopedias, etc.

(3.30) Application - with judgment:

The ability to exploit the resources of the library as a result of previous experience, knowledge of content within the collection and an understanding of the meaning of that content.

5.93 To know the characteristics of specific library materials.

(1.12) Knowledge - specifics:

Knowledge of the individual characteristics of tools, such as kinds of information included, tables, illustrations, and coverage, which make them useful for particular purposes.

(3.30) Application - with judgment:

The ability to use knowledge of content of specific materials and previous experience in choosing a likely source of desired information.

5.94 To know the patrons' uses of materials.

(1.12) Knowledge - specifics:

Knowledge of the studies that have been reported with regard to patron use of libraries. These have been mostly quantitative in nature, giving some indication with regard to frequency of use, but very little indication about how or why patrons use materials they obtain from public libraries.

(3.30) Application - with judgment:

The ability to recommend material which appears to meet the need as expressed by the patron.

5.95 To know the kinds of restrictions which may be imposed upon library service.

(1.12) Knowledge - specifics:

Knowledge of the schools of thought with regard to the obligation of the librarian to satisfy a patron's needs at all times. Impartiality of service is perhaps idealistic. However, the actualities of operation do not always permit this. There are limitations of time, staff and resources which affect "unrestricted service." Matters of policy with regard to the dispensing of certain types of information, such as that dealing with law and medicine, often impose other restrictions.

(3.30) Application - with judgment:

The ability to maintain restrictions which must be imposed upon service as a result of limitations, facilities, or pre-determined policy.

5.96 To know the techniques for compiling bibliographies, as well as the content and conventions of bibliographical notation.

(1.21) Knowledge - conventions:

Knowledge of the practices usually followed in compiling bibliographies, and knowing that the format may vary according to the purpose the bibliography is expected to serve.

(2.10) Comprehension - translation:

The ability to interpret bibliographical notation as a means of helping patrons.

(3.30) Application - with judgment:

The ability to compile a bibliography in suitable format for a specified purpose.

3. Selection of Educational Objectives against which to Evaluate Library School Curricula.

Only 64 of the 83 classes which were applicable to the needs of public service librarians could be considered the responsibility of formal library school education. Six of the 83 were related to subject matters of disciplines specifically pertinent to liberal arts and general education.* Thirteen were specifically related to the characteristics of individual libraries and so were also considered out of the realm of responsibility of the library

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*1. To be knowledgeable in a variety of subjects.
1.1 To know the interrelations among subject fields.
1.2 To know one or more subject areas in some depth.
1.3 To know the general terminology of many fields.
1.4 To have some knowledge of foreign languages.
1.5 To know the symbolic representations of languages and other graphic information.

schools.* However, the lines between the responsibilities of pre-professional, formal professional education, and on-the-job training are not clear cut. Some needs may represent a combination of all three of these training levels. However, if formal professional library education, as it exists today, has assumed partial responsibility for developing these objectives, then they were considered a responsibility of library schools for the purpose of this study. These 19 exclusions left a list of 64 educational objectives which had been identified by the data that were of importance to public service librarians.

4. Librarians' Emphasis on Educational Objectives

Twenty of these classes were identified by librarians ten or more times each. While they represented only 31.3 percent of the 64 classes for which formal professional education should have responsibility, they represented 79.6 percent of the frequency of identification for the entire 64. They appeared, therefore, to be the more critical ones, and much of the following discussion is focused on those 20 which are listed below.*

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* 2.5 To know the happenings within an environment.
2.7 To know who are the library supporters in a community.
3.21 To know the policies of an individual institution.
3.41 To know, within a particular institution, not only the formal organizational structure and lines of authority, but also the actual structure under which the library operates.
3.42 To know, in addition to the formal and informal lines of the authority and responsibility vested in many jobs in the library.
3.44 To know the responsibilities and authority with which a specific position is entrusted and how it fits into the entire function of the organization.
3.45 To know where to turn for assistance.
3.51 To know the routines and procedures of a particular operation or institution.
3.71 To know the internal channels of communication within a specific library.
3.93 To know the requirements of specific jobs within an institution.
3.931 To know the level of performance which can be expected in connection with a specific job.
5.612 To know the adaptations of cataloging rules and other cataloging practices in an individual institution.
5.621 To know the structure and adaptations of the classification system used within a particular library.

1.6 To know literature. (9)

2.4 To know the clientele which makes up the community. (4)

2.6 To know about other institutions within the community. (8)

3.1 To know the techniques of planning and the implications of implementation which may exist in any proposed change or revision of an existing plan or operation. (14)

3.2 To know the techniques of the decision-making process. (15)

3.5 To know the techniques of research, analysis, and systematic inquiry. (13)

3.52 To know what are the tried and proven applications of machines and equipment to the automation of specific library procedures, as well as what new applications presently are being tested. (16)

3.7 To know some of the principles of effective communication. (7)

3.72 To know the principles of public relations as well as the external channels of communication open to a library. (8)

3.9 To know the principles of social psychology and human relations. (1)

3.91 To know some of the principles of learning and the elements of supervision. (15)

5.2 To know the prevailing opinions with respect to the purposes of a public library. (14)

5.41 To know that public libraries must be selective in the collection and retention of materials. (11)

5.52 To know the tools of bibliographical searching. (12)

5.53 To know the techniques for finding particular kinds of information. (9)

5.61 To know the principles of cataloging. (16)

5.62 To know the structure of specific classification schemes. (12)

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* Numbers in parenthesis at the ends of the statements indicate rank of importance according to the number of times each was identified by librarians.

5.91 To know that patrons do not or cannot always make their wishes known. (7)

5.92 To know the literature and other forms of material which are represented in the library's collection. (3)

5.93 To know the characteristics of specific library materials. (5)

The knowledges and levels of intellectual skills, and abilities in these 20 most frequently identified educational objectives are varied. The behaviors involved reflected the levels of comprehension, application, analysis, synthesis, evaluation, and social skills. Behaviors in the 64 classes showed the same variation in the degrees of emphasis placed on the various levels.

From the library data collected, the relative emphasis which librarians placed on the various levels of knowledge and intellectual skills could be estimated. Of the 20 knowledges which were most frequently indicated to be of importance, comprehension and application were also indicated as an important educational outcome in 19 of those 20 instances. Analysis was considered important for 9 of the 20 classes, synthesis in 8 out of the 20, evaluation in 1 out of the 20, and social skills were desirable goals in 6 of the 20 needed proficiencies.

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VI. IDENTIFICATION AND ANALYSIS OF CURRICULAR CONTENT

This chapter deals with the second purpose of this study. As noted in Chapters I and V, that purpose was to consider professional library education, as apparent from the data collected, in relation to desired educational outcomes and behaviors identified by professional librarians. As was the case in Chapter V with the identification of desirable educational objectives for public service librarians, the identification and analysis of curricular content was carried out in a series of steps which are described below.

A. Collection of Library School Data

The next few pages briefly describe the method of selecting the schools to be visited, the means by which data was collected, and the kinds of materials gathered.

1. Sample Selection

The first criterion for the selection of library schools was that they be American Library Association-accredited graduate schools. Then, they were winnowed as to types of programs offered and courses which appeared significant for public-library training. And, finally, as with the libraries, a reasonable geographical representation was sought. It was intended to visit approximately 10 library schools. In anticipation of a willingness to cooperate similar to that which had been found in libraries, a somewhat smaller number of schools was approached. Of the 14 schools contacted, only one replied that it did not wish to participate and the other 13 indicated wholehearted cooperation. One which offered to take part in the study could not be visited, but material was collected and interviews conducted by the investigator at the remaining 12. A list of these schools may be found in Part "B" of Appendix 1.

2. Data Collection

The data collection in library schools included the steps below.

a. Collection of Printed Materials. Prior to visiting the chosen library schools, the investigator identified the courses that appeared to be pertinent to the purposes of this study, judging from the descriptions in their respective catalogs. The heads of the schools were notified which courses were of interest, and it was requested that interviews be arranged with the appropriate faculty members. These faculty members were asked to provide the interviewer with course outlines or syllabi, descriptions of assignments and projects, reading lists, and examinations.

b. Interviews and Interview Guide. Faculty members were interviewed regarding the courses suitable to the purposes of this study. These interviews averaged one to one and one-half hours each. An interview guide was followed in the visits with each instructor. Although some questions were less relevant to some courses than to others, they were asked of all those interviewed in the interest of consistency. The value of this practice was apparent a number of times, for in view of the varied content of courses in different schools, useful and relevant information appeared in a number of unexpected instances. As in the case of the librarians, the faculty members were assured of anonymity in the report of findings.

An interview guide was formulated after a preliminary list of tasks performed by professional librarians had been prepared. The manner in which this list was developed was described fully in the previous chapter "Identification of Desirable Educational Objectives." However, in order to show how the list, among other factors, served as the basis for the questionnaire guide, a brief summary is necessary here. The compilation of the list of activities in which professional librarians were engaged began with an analysis of job descriptions from a number of large public libraries. The testing of the methodology for data collection at Carnegie Library of Pittsburgh added to this list of activities, and as noted before, after the first library had been visited the list was reviewed and considered satisfactory for the data collection process. The first purpose of the questions, then, was to bring out the course content applicable to this list.

A second purpose of the questionnaire was to help identify the levels of knowledges, skills, and abilities which were being developed. In addition to actual knowledge and subject content, the extent to which higher-level educational objectives were required or encouraged was of particular interest to this study. Therefore, the questions were worded in a way to draw out evidence of the development of comprehension, application, analysis, synthesis, and evaluation.

The third purpose, as reflected in questions 1, 2, and 3, was to determine if the educational objectives had been identified beyond the very general statements which appeared in the school catalogs.

A fourth purpose was to identify some of the means and criteria by which the instructor motivated and evaluated the educational achievement of the student either through assignments and projects or examinations.

In many instances more than one of these purposes were included in a single question. Some revisions were made after pretesting the form on the faculty of the Graduate School of Library and Information Sciences at the University of Pittsburgh before data was gathered in the field.

In the correspondence before the investigator's visit, the heads of the schools and faculty members were asked to have as many of the desired materials as possible collected and available for the investigator prior to the interview. With course material in hand, the interviewer then talked with faculty members, using the interview guide as a means of augmenting and interpreting the printed material which had been collected. Naturally, in some respects, the interview only duplicated what could be observed from the printed material, but it offered the faculty member an opportunity to clarify or expand when he wished to do so.

As mentioned in the section on "Sample Selection," one of the criteria for selection of schools was the variety of courses appropriate to the work of public libraries. Materials and interviews with faculty members were requested in connection with relevant courses. However, for several reasons, analysis of courses could not be quite as exhaustive as had been hoped. It was stated by some instructors that it was either the policy of the school or their own individual policy not to give out outlines, syllabi, assignments, examinations, and reading lists. In some instances the appropriate faculty member was on leave, out of town, ill, or otherwise unavailable. Some courses listed in catalogs were not being taught and had not been taught recently because of teaching overloads or because there was no appropriate faculty member available to teach them. Finally, in a number of cases the instructors could provide so little documentary material that it was felt the content and aims of the course could not be fairly judged. Therefore, rather than attempt to draw conclusions from such limited and possibly non-representative or atypical material, these courses also were eliminated at the time of tabulation and analysis.

The questions asked in the interviews, and an explanation of what each was designed to bring out, follow as the next section of this chapter. The reader will note that the explanations which follow the questions are stated in terms of could rather than did. There was definite reason for this choice of words. It cannot be presumed on the basis of the data collected that the student necessarily did get such results from that particular learning experience. A more detailed discussion of this may be found in a later section of this chapter, "Analysis of Curricular Content."

In the interests of completeness and consistency during the interviews, a number of prompts were included in the interview guide. These are in parenthesis and were used as cues for the interviewer only. Each question in this interview guide, as presented here, is followed by an explanation of the purpose of that question. These explanations, which are indented and single spaced, did not appear on the original interview guide.

LIBRARY SCHOOL FACULTY - Interview Guide

(If not already collected, please request course outlines, reading lists, examination questions, assignments, descriptions of projects, etc. State that expenses incurred will be paid by interviewer. State that all information will be confidential and that no reference will be made to any individual or institution in connection with specific information in the report.)

Courses taught:	#_____	Title	_________________
	_____		_________________
	_____		_________________
	_____		_________________
	_____		_________________
	_____		_________________

1. What are the objectives of each of these courses?

Course #_____ Course #_____ Course #_____

> Benjamin Bloom and Ralph Tyler have said that the objectives of an educational situation often are stated in such broad terms that they are not very meaningful for the purposes of curriculum planning or evaluation.[1] Objectives as stated in school catalogs are commonly in these brief and very broad terms. Therefore, it was felt that it would be useful to see if objectives of library school courses were generally stated elsewhere in terms of sufficient precision to serve as significant guides for curriculum planning and content. Faculty members were asked to define verbally the objectives of their courses.

2. Are these objectives in written form?

Course #_____ Course #_____ Course #_____

#_____ #_____ #_____

Robert F. Mager stated emphatically that for instruction to be prepared in such a way that it will accomplish what the instructor hopes to accomplish, the objectives must be very clearly and unequivocally stated.[2] Without such a clear knowledge as this, instructors will constantly function in a fog of their own making.[3]

3. Are the students told at the beginning of the course what objectives are?

Course #_____ Course #_____ Course #_____

#_____ #_____ #_____

A presentation of the objectives to the students, either orally or in written form, is helpful as an orientation. It should help the student sort the more significant aspects of the course from the less significant and can often be of value in the development of study patterns, habits, and concentrations.[4]

4. Do you explicitly teach terminology? (If yes, what?)

The terminology of librarianship was referred to frequently enough by librarians to indicate that they consider it to be quite important. Terminology is a concrete form of knowledge with little complexity[5] which represents one type of factual information. By this question, it was possible to determine, to a degree, the specific terminology taught.

5. Do you teach terminology of a subject field other than librarianship? (If yes, please explain.)

Because of the emphasis by librarians on a need for at least a "speaking acquaintance" with the terminologies of many fields and professions it was felt this question should be included.

6. Do you teach specific facts? (If yes, can you give me examples?)

> Representing a slightly different level of knowledge from terminology, this question also was aimed at finding out what background information was taught with regard to the profession. Depending upon the course, these facts could have related to people, places, events, trends, specific tools, etc. Also it was intended to help determine to what extent teachers recognize that they are teaching facts. It was believed it would be worthwhile to compare these answers, as well as some other responses, with the educational objectives and the construction of tests or other evaluation instruments.

7. Do you teach abbreviations, symbols, etc.? (If yes, please describe.)

> Knowledge of symbolic forms of representations is another form of knowledge identified by Bloom and others.[6] There are numerous places in librarianship where these are used and interpreted, such as in cataloging, bibliographical notation, map reading, statistical records, indexes of various kinds, publishers' catalogs, bibliographical tools, acronyms, etc.

8. Do you teach formats and conventions? (If yes, what are these?)

> Cataloging rules and the format of catalog entries exemplify conventions as do types of literature such as verse, fiction, or technical reports. The arrangement of a reference tool is also a matter of convention. Also included in this would be the principles of format design used with data processing equipment.

9. Do you teach bibliographic notation? (If yes, how do you teach this?)

> Bibliographic notation is also another convention. Knowing how to compile information in a bibliographically correct form, and the ability to interpret this information, enters into many important library activities.

10. What classification system do you teach?

A classification system for a library collection most decidedly falls into the "Knowledge of Classification and Categories." The predominant use of the Dewey Classification System is assumed in public libraries, but there is current interest and activity in reclassifying collections to other systems. Therefore, it was considered advisable to find out what systems are being taught.

What do you teach about this system(s)?

Part two of this question was worded to try to identify whether the courses emphasized the theory and structure of systems. It could also indicate the development of comprehension and skill in the formulation of evaluative judgments in the classification of library materials.

11. What are your assignments for teaching subject headings?

Since certain standard subject headings are used to identify certain material content, there are standard lists and uniform patterns of subdivision to be followed. This represents a further extension of knowledge of classifications and categories.

Though not being specifically directed to whether subject headings were taught, responses to this question did provide that information. As in the case of the previous question, it provided information on whether the teaching stressed the theory behind subject headings as a basis for building the skills of analytical application, or whether the opportunity for application was kept at a very low level of complexity.

12. Do you teach indexing? (If yes, please explain what and how.)

With the developments toward automated information storage and retrieval, a more acute awareness of the relationships between indexing, content analysis, and subject headings has become evident among librarians. These processes can require considerable analytical ability especially in connection with analysis of relationships. It appeared, therefore, desirable to determine whether this was being recognized in the curriculum.

13. Do you teach the techniques of abstracting the content of a work? (If yes, please explain abstracts, annotations, reviews.)

> In view of the increasing emphasis for public libraries to serve as sources of information, as evidenced by collection specialization, some librarians felt there was more and more need to know the techniques of good abstracting. Not only does this acquaint them with the problems involved, but also enables them to judge the value of abstracts. They may need to produce abstracts for materials on which they are not otherwise available. Traditionally, the ability to annotate and review materials has been considered a necessary one for librarians. Readers' notes in library catalogs and reviews such as those generally presented to club groups are examples of the descriptive types. Librarians are frequently required to prepare critical ones as well.
>
> These tasks, though they may appear rather simple, can include a wide range from mere knowledge of format and conventions to comprehension at the level of translating into a more concise form, comprehension at the level of understanding content, analysis involving recognition of significant factors, synthesis at the level of producing a communication and, finally, evaluation against criteria.

14. Please explain how you teach selection of materials. (If not mentioned voluntarily, ask about criteria for judging suitability to particular collection, etc.)

> Part of this question reflects the lower limits of the taxonomy, and involves knowledge of criteria by which materials may be judged, knowledge of the sources of information about materials, knowledge of sources of acquisition, and knowledge of the usual procedures of purchase. On a much higher intellectual level, this question is concerned with the evaluative processes involved in the use and application of this knowledge.

15. Do students present criticisms of library materials?

(If yes, in what way?)

The need for the ability to apply learned facts or principles appeared frequently in job descriptions and in the additions which were made to the preliminary list by the 16 librarians at Carnegie Library of Pittsburgh who contributed to the formulation of that preliminary list. Presenting criticisms, as mentioned above, could indicate such an application of learned factual information. It could reflect analysis and some synthesis for the purpose of communicating with others either orally or in written form. It could also reflect the development of evaluative skills on the part of the student.

16. Are students required to make other evaluative choices?

(If yes, regarding what, and how are these choices presented?)

Many of the job descriptions of professional librarians reflected the exercise of evaluative and discriminatory judgments. Question 15 helped to identify to what extent these abilities could be developed with specific regard to library materials. However, it was felt that in view of such a wide-spread need for these abilities, a similar inquiry in more general terms was also in order.

17. Are students required to substantiate their choices?

An assignment of this sort could indicate some of the higher-order skills, such as evaluative judgments and analysis, at least to the level of recognition of points relevant in the validation of that judgment.

18. Do you instruct in the techniques of querying patrons?

(If yes, how do you do this?)

Patrons often cannot, or for various reasons do not, express their real informational needs. The ability to draw a patron out may require translation from one level of abstraction to another, comprehension, and social skill as well as subject knowledge.

19. Do you teach anything with respect to what kinds of materials patrons may use? (If yes, please explain.)

> The problem of limited use on particular kinds of materials was the concern here, rather than the attitudinal aspect regarding a philosophy of impartial treatment for all patrons. In a library situation, policy decisions may dictate the dissemination of medical and legal information, the use of adult materials by juveniles, restrictions on the use of rare items, etc. Assignments dealing with such decisions and policies could have developed some comprehension and skills of application and analysis.

20. Do you define limits of service a patron is entitled to?

> This, again, was not to draw out a teaching of attitudes, but to determine whether the problems of pressure of work, quantity of staff, etc. are identified as contributing factors to the kind of service which is possible. Comprehension could have been involved as well as specific knowledge.

21. What do you teach with respect to the publishing field?

> Factual material on this subject was specifically identified as a needed knowledge by a number of librarians.

22. Do you teach the structure of the book trade? (If yes, what?)

> Factual information regarding the book trade was identified as needed, especially for the work of acquisitions. There appears to be divided opinion, however, as to whether or not acquisitions is a professional task. The point of question may lie not so much in whether acquisitions work is professional but in how one defines acquisitions.

23. Do you deal with library buildings? (If yes, please explain.)

> Frequently librarians working primarily in public service are called upon to plan, or help plan, quarters within the library. In addition to factual information, such as knowledge of building and equipment standards, desirable features of arrangement, etc., the

objectives of assignments in this area could also involve comparative evaluation.

24. What do you teach about administration and management? (If following categories are not brought out, mention them: personnel, planning, budget-fiscal matters, organizational structure, legal basis, governing authorities, sources of support, analysis of methods, methods of reporting.)

The various phases of administration and management involve specific fact and principles and generalizations which are of value in explaining, describing, predicting, or determining the most important and relevant action or direction to be taken. The way these functions of administration were treated in class, and the respective assignments, could have real significance for the development of the skills of application, analysis, and synthesis.

25. Are students asked to analyze problems and produce proposed solutions? (Can you give me an example?)

Through such assignments, the abilities of application with judgment, analysis of relationships, and the resolution of problems could be strengthened. There was clear evidence in job descriptions, and in the remarks of the librarians interviewed prior to the formulation of this questionnaire, of concern with the ability to analyze practices and services objectively.

26. Are your students in this course required to work out a specific operational procedure or routine of any kind? (If so, can you tell me what and how?)

The primary purpose of this question was to determine to what extent students are given the learning experience of combining parts or elements into a logical structure or pattern of their own making. The processes of comprehension, analysis, application, and a degree of synthesis could all be developed.

27. Are students required to formulate policy decisions on the basis of given situations? (If yes, please give an example.)

> In the formulation of a policy there are factors other than recognition of the fact that one is needed. There should be present the ability to recognize what is pertinent to the validation of a policy decision. This ability could reflect both comprehension and analysis. Comparative evaluation of alternatives could bring in an element of application.

28. Do you teach any logic or mathematical concepts? (If yes, what?)

> A two-fold purpose was involved in this inquiry: 1) Was logic and mathematics considered important for the role the librarian will play in the application of new technology? 2) Did this teaching reflect an attempt to develop analytical and critical thinking?

29. Do you teach methodology of research? (If yes, please describe how?)

> A knowledge of methods used for inquiry into problems similar to those of the field of librarianship was identified as being of value. This does not necessarily imply that all librarians will need to know how, nor be expected, to do such work. But even for those who will never participate in serious research, this, like logic, could encourage a systematic approach to problems which represent some of the higher levels of ability.

30. Do you teach anything about cultural, economic, and intellectual patterns of clientele? (If yes, what?)

> The importance of the library's relation to its environment was apparent in many tasks identified by job descriptions as well as in the information obtained from the 16 librarians at Carnegie Library of Pittsburgh. Therefore, it was deemed worthwhile to determine what stress was put on this by education. An opportunity to form comprehensive and analytical skills could exist in

relating these factors to the library.

31. Do you teach any human relations or the psychology of dealing with people? (If yes, please describe.)

> Job descriptions frequently reflected the library's role as a social and service institution. The human relations element as it extends to the librarian's ability to deal with both patrons and staff is very apparent and closely allied with the principles of human relations and social psychology.

32. Do you teach any foreign languages? (If yes, how and to what extent?)

> This level of comprehension, which is actually termed "translation," covers literal language translation of verbal material. Translation from one symbolic form to another is also the same level of comprehension.

33. Do you teach how to recognize propaganda or bias? (If yes, what?)

> In selection of materials there could be an analytical skill involved in recognizing the techniques of persuasive materials, and in being able to infer an author's purpose, his point of view or bias. Problems may arise, especially in free literature such as religious, political, and society publications. Comprehension at the level of differentiating between warranted and unwarranted conclusions and statements could be involved as well.

34. Do you teach the principles of communication theory? (If yes, please explain and give examples of how this is presented.)

> Many of the activities mentioned in job descriptions contain an inherent ability in the communication skills. The teaching of communication processes, techniques, and channels could enhance the abilities which fall into the categories of application, analysis, and synthesis.

35. Do you give written assignments? (If yes, can you tell me what kind?)

3

Is a term paper or project required? (If so, please give an example of scope and depth of coverage expected.)

> Within the ability to communicate is the ability to formulate, orally or in writing, a communication that will convey the desired information and the intent and meaning of the writer. Therefore, this question was asked to determine if this ability was encouraged. Also analytical and evaluative abilities could sometimes be required in these assignments.

36. Do you give an examination?

> Evaluation may depend upon standardized measurement as well as more subjective means of evaluation. Analysis of examinations provided information as to what knowledges and skills were being tested, thus further indicating content and intellectual abilities involved in the course.

c. Adequacy of Data Collected. The adequacy of information from library schools was not as easily measured as was the case with the library data. Requests were made to investigate 183 courses which, from their catalog descriptions, gave evidence of being appropriate fortraining for public service. Investigation of all desired courses was not possible, however, for a number of reasons. In some cases, the faculty member was off campus for an extended period of time. In others, faculty stated that it was either the schools' or their own policy not to make materials available for such purposes. In some instances the course was not being taught because of apparent faculty overloads or because no suitable faculty member was available. Finally, some instructors could provide so little documentary material that it was felt the content and aims of the course could not be fairly judged. Therefore, rather than attempt to draw conclusions from such limited and possibly non-representative or atypical materials, these courses also were eliminated at the time of tabulation and analysis.

One hundred fifty-two courses were investigated. Sufficient information was obtained from 79 courses. These were a representative variety of courses of particular importance to the public-service limitations of this study. Each type of course which appeared significant to this study was represented by material from more than one school in sufficient quantity to be analyzed. Also, materials from similar courses which did not provide enough information to warrant inclusion in this report were analyzed for the purpose of detecting any important omissions. In no instance did these additional materials reveal possibilities for the development of knowledges, skills, and abilities not already noted.

B. Analysis of Curricular Content

It should be recognized at the outset that this study made no attempt to analyze all courses which were offered in the twelve library schools visited. That was neither feasible nor intended within the limitations of this study.

1. Material Analyzed

Although, prior to the interviews, copies of outlines or syllabi, assignments, examinations and readings had been requested, not all this material was available even for the seventy-nine courses which were included in the results reported. No quantitative rule could be set such as "analysis will be pursued only if three out of four categories were supplied" because some types of material, naturally, proved to be more fruitful for the purposes of analysis than others. For example, reams of reading lists were not nearly so valuable for analysis of actual course content as, perhaps, an examination paper. Nor was a course outline necessarily as indicative of the levels of ability which the instructor sought to develop as was a description of a class assignment, term paper or project. Interpretations gleaned from interviews were considered extremely important as indicators of the educational objectives of the instructor, and variations within assignments, examinations, etc. were significant for different courses. However, one limitation was strictly observed. In no case was course content analyzed if the appropriate faculty member was not interviewed. The interview had proved significant in gathering pertinent information, including the levels of intellectual skills the instructor sought to develop.

2. Methods Employed in Analysis

As various types of material from the library schools were examined, the analysis involved two approaches. The first was identification of the subject content, which was then coded in terms of the Taxonomy of Librarianship. The second approach was judging the levels of intellectual skills which appeared to have been developed in accordance with the categories identified in Bloom's *Taxonomy*. It will be recalled from the discussion on the development of the Taxonomy of Librarianship in Chapter V that possible levels of skills and abilities were identified on the basis of knowledges, skills and abilities deemed important by librarians. These, however, were exemplary of what *could* be involved in the performance of such activities. They are not necessarily *all* that could be involved. Nor were they indicative of what always *is* involved. An example may be useful, using the construct "5.61 To know the principles of cataloging." In analyzing the related knowledges, skills, and abilities obtained from the data collected in libraries, the following levels of educational achievement could be reached.

(1.12) Knowledge - specifics:

Knowledge of the existence of cataloging rules, the various kinds of rules, types of entries, etc.

(2.20) Comprehension - interpretation:

The ability to establish the responsibility for authorship.

(3.10) Applications of prescribed rules to a given situation:

The ability to apply a cataloging rule to a very straightforward and simple situation, or to apply the accepted rules of format in the arrangement of information on the catalog card.

(3.20) Application - with modification:

The ability to apply a cataloging rule with some alteration in order to make it consistent with the library's existing catalog.

(3.30) Application - with judgment:

The ability to distinguish meaningful clues which would lead to the identification of a source of responsibility for a "problem" situation in cataloging.

On the other hand, a class assignment or an examination question involving cataloging might or might not involve all of the above levels. If an examination question were "What is the rule for entry for married women under the American Library Association code for 1949?," it would be hard to justify anything above the level of knowledge of specifics at the level of rote memory. On the other hand, suppose the instructions for an assignment or examination read: "Make a main entry card for the book which you have been given according to the rule you feel is appropriate in the Anglo-American Cataloging Rules which you have brought to class with you." In this case the situation would be quite different. All levels except (3.20), that of modifying the entry to fit into an already existent collection, probably would be required.

Such factors as may have been stressed by an instructor throughout an entire course were influences which this investigator had no way of evaluating. For example, if much responsibility had been placed on the student throughout the term for choosing what was proper, then it was likely that many of these abilities were required. If, on the other hand, the instructor stressed strict adherence to his own personal opinions, then it was perhaps more a matter of response to certain cues. These cues may have guided students in giving the type of response or exact answer they knew was expected. Furthermore, the levels of educational achievement that the student was required to demonstrate were affected considerably by what was involved in the learning experience of the individual student.[7] If the prior teaching included activities and information which provided the student with all he needed in order to do what he was expected to do, then the levels of achievement necessary for performance may not have been very complex. But, if he had to understand principles and relationships which he then used in performing the task with which he was presented, the more complex levels may have been required.

Such terms as "discuss," "compare," and "define," frequently found in examinations, can be deceiving in understanding what is expected of the student in the way of an answer. Even if some comprehension or evaluation were expected, the student may have acquired some idea of what the instructor expected through exposure to the latter's lectures. And, on the other hand, this may have represented mere recall only. Specific evidence of this was assignment and examination questions in which the students were asked to discuss the values or advantages and disadvantages of certain reference tools. One could assume varying degrees of skills depending upon the answer that was expected. Were acceptable answers based on the students' judgments of the tool as weighted against some accepted criteria, or merely on a choice of one tool over another? Were the desired responses reflections of the students' experience in actually working with the tool, or some combination of all of these and other factors? In some cases, according to the instructor, the expected answers were only a reflection of what he had told them in class.

However, "discuss analytically," "compare critically," or "define in terms of its relationship" may have reflected entirely different levels of achievement. "Give your reasons" was another instruction that may be interpreted in a number of ways. What kind of reasoning or analysis was required? "Read a current novel that might be considered a problem on the shelves of a public library. Justify its inclusion or exclusion. Your own critical viewpoint is important." In doing this assignment, it is reasonable to assume, though the assumption is not indisputable, that the professor would demand more than a mere repetition of what the student has been able to glean from published reviews and discussions on censorship and pornography.

Since there was possibility for error in judgment in these kinds of situations, examples of what were considered satisfactory responses to examination questions and assignments were requested in a number of instances. Some responses received were quite enlightening. One instructor's description of what he would expect in response to a situation problem indicated considerable evidence of an attempt to develop the skills of comprehension, analysis and evaluation. Another required the viewing of a film portraying a problem situation and the students were asked to analyze the underlying issues and suggest a reasonable solution. This, too, appeared to call for analytical and reasoning ability on the part of the student. In another case, the instructor replied that some of the questions did not have standard answers and were evaluated heavily on the judgment that had gone into them. The questions of which he was speaking certainly appeared to demand original thinking for the type of answer the instructor indicated he would expect.

On the other hand, some examination questions and class assignments could demand either a great deal or very little of the student, for they did not make clear what was expected. The responses to many of these, although considered adequate to excellent by the instructor, appeared to be very much like recall. At best, they represented opinion formed as a composite of what had probably been said in class or read in readings rather than the students' original and constructive thinking. Thus, the investigator attempted, through the interview and gathering of satisfactory responses to assignments and examination questions, to ascertain the intellectual skills and abilities which the instructor sought to develop. Direct questioning of faculty with regard to whether or not they felt that they were developing comprehension, and the abilities to apply knowledges, analyze situations, synthesize, and evaluate could very well have given a distorted picture. Authorities in education feel the students study for and learn what they know will be tested.[8] Therefore, what the instructor accepts as a satisfactory answer may be even more indicative of what he is developing than what he believes himself to be developing.

The analysis of course content represents this investigator's interpretation of what was taught, as based on the data collected and after reference to authorities in the field of education. A comprehensive analysis would have required attendance at each session of each course under consideration. However, the problems and possibilities of judging the levels of knowledges, skills and abilities expected by the instructor were kept in mind during the analysis of curricula. Where intent and resulting levels seemed unclear, the benefit of the doubt went to the higher, rather than the lower, level.

Tabulation of the results of the analysis was kept in the categories of outlines, assignments, examinations and interviews.

Outlines and syllabi were used primarily for the identification of subject content for little else could be ascertained from them in most cases. However, where assignments were incorporated in these materials, they were analyzed along with other assignments, examinations, and information gathered by the interviewer. These data were analyzed to determine the level of intellectual achievement that appeared to be developed in each course. Information from the interview, of course, somewhat overlapped that of assignments and examinations, as the interview was, in great part, a discussion of lectures, assignments, and examinations. Therefore, in the final tabulation, only that information from the interview which reflected a new knowledge, skill or ability or indicated an interpretation not previously detected was recorded.*

These processes then produced the educational data which could be compared to the previously identified knowledges, skills and abilities needed by professional librarians.

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*Methodology of recording data is described in Appendix 2.

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VII. FINDINGS

This chapter, for ease of comprehension, is divided into four sections. The first section discusses briefly some of the problems inherent in the type of research used in this study with which the researcher must deal. The second section considers the number of needed knowledges of primary importance identified by librarians and the number of those identified which were found in curricula. The third section discusses some important factors influencing the achievement of educational objectives. The fourth section compares the needs most frequently identified by librarians with curricular content. After discussion and interpretation of these findings, their meaning as related to the stated hypothesis is formulated into conclusions presented in the next chapter.

A. Ex Post Facto Research

The type of research employed in this study is known as ex post facto research. It is recognized that research of this type must contend with what is sometimes called "post hoc fallacy."[1] A researcher must be constantly on guard to avoid drawing unwarrented assumptions based on uncontrolled variables within the environmental structure of the phenomena being observed and studied. Part of the lack of control lies in the fact that many forces have already exerted their influence before the period of observation begins. The researcher cannot set up the phenomena to be observed but, instead, must review them in retrospect. Ex post facto research, unlike experimental research, cannot be controlled by randomization or manipulation[2] and, therefore, its degree of probability cannot be so great as the latter.

But much educational and social science research does not lend itself to true experimental research for many of the important variables are not manipulable.[3] Because data cannot be controlled as thoroughly in ex post facto research as it can in experimental research, the researcher must also guard against improper interpretation. So long as one does not seek interpretations and facts to fit each other[4] ex post facto research is a very useful and valuable method in the fields of sociology, psychology, and education for many studies that cannot be approached in other ways.[5]

Care was taken in this study to avoid post hoc fallacy by attempting to draw conclusions strictly from the data collected from librarians and the school curricula which could be analyzed.

B. Findings Regarding the Number of Needs Identified by Librarians and the Corresponding Curricular Content

The relationships between needs for professional knowledge and skills, and the content of school curricula will be discussed in the subsections below.

1. Number of Knowledges

In Chapter "V. Identification of Desirable Educational Objectives," 83 subject knowledges and their related skills and abilities were identified as desirable for public service librarians. Nineteen of those were excluded from these discussions because they were not considered the responsibility of professional library education. Of the remaining 64, 20 were considered the most important because each of them was identified ten times or more by librarians employed in large public libraries.

Five schools, of the 12 visited, provided by far the greater number and variety of courses which could be analyzed. These schools, then, were the ones chosen as sources of the data to be compared with that collected from libraries. Forty-eight courses are represented in the data which could be analyzed from these five schools. The table below indicates how many of these on the lists of 64 and 20 knowledges were identifiable in library school curricula.

Table 3

SUBJECT KNOWLEDGE NEEDS IN EDUCATIONAL OBJECTIVES
AS EXPRESSED BY LIBRARIANS AND AS FOUND IN
LIBRARY SCHOOL CURRICULA

Identified by	64 educational objectives for public service at knowledge level	20 of the 64 educational objectives cited most frequently as important
Librarians	64	20
School #1 (10 courses)	35	15
School #2 (10 courses)	43	17
School #3 (10 courses)	44	17
School #4 (11 courses)	44	17
School #5 (7 courses)	27	10

It can be seen from Table 3 that some subject knowledges were not covered in the data collected at every school. By checking these knowledges one by one it was found that there was coverage of 60 of the 64 factual knowledges by one school or the other. The variation in coverage in any one school was influenced by the courses for which material was made available to this investigator for analysis. In the four schools (see Table 3 above) for which data were available from 10 or 11 courses, the coverage of the 64 knowledges ranged from 55 to 69 percent. In view of their importance one would expect the coverage of the 20 most frequently identified to be higher. Coverage of these 20 did range from 75 to 85 percent in the curricula of the same four schools. The 48 courses which were included in the five schools were in the following areas: orientation to, or foundations of, librarianship; selection; cataloging and classification; reference and bibliography; advisory services to adults, children, and young poeple; administration; the library in society; public libraries; history of libraries; automation; and information sciences.

If all 64 knowledges had been found in all schools, could it have been assumed that each student would have had the opportunity to acquire them all? This question pertains not only to subject knowledge but to the other levels of educational achievement as well as is shown in the following discussion.

2. Number of Achievements Identified as Important to Public Service Librarians

In the Taxonomy of Librarianship, each of the 64 subject knowledges is a nucleus around which skills and abilities cluster to form an inventory of desirable educational objectives or achievements. Table 4 indicates the number of achievements at all levels identified by librarians which are connected with the 64 knowledges. It also indicates the number of related achievements found in the curricula of five schools.

Table 4

EDUCATIONAL ACHIEVEMENTS FOR PUBLIC SERVICE, IDENTIFIED BY LIBRARIANS AND STRESSED IN LIBRARY SCHOOL CURRICULA

Intellectual Level	No. Identified by Librarians	No. Identified in Curricula of Five Library Schools 1.	2.	3.	4.	5.
Knowledge	64	35	43	44	44	27
Comprehension	60	19	20	20	19	11
Application	44	18	19	19	18	11
Analysis	27	9	15	8	9	8
Synthesis	14	4	12	8	7	7
Evaluation	4	6	7	5	3	3
Social Skill	18	0	2	1	2	1
Totals	231	91	118	105	102	68

A total of 231 educational achievements in the seven levels of knowledges and intellectual skills were identified by librarians as important for public service personnel. The curriculum of school number 2, with the highest total of 118, represents an achievement of only 51 percent of the 231 knowledges and their related skills and abilities. An analysis of the schools' catalogs indicates that the average Master's student would take an equivalent of 11 to 13 courses (in a semester system) to complete the degree. Again using school number 2 as an example, 118 educational achievements in 10 courses is an average of approximately 12 achievement goals per course. If it were projected that for each new course added to those first 10, an additional 12 new achievements would also be added, it can be estimated how many achievements would likely be developed during the completion of the requisite number of hours for a degree. On this basis 12 new achievements each would be added by course number 11, 12, and 13 for a total of 154 achievements deve[illegible]d upon completion of 13 courses. There are two factors which could invalidate such a projection. First, because of the content and nature of the 11th, 12th and 13th courses there might not be 12 new achievements involved. This could result from duplication of course content or for various other factors. If such were the case, the ultimate number accrued would be less than 154. The second factor, again depending on the content, the additional courses might result in more than 12 new achievements each. The data from these five schools does not indicate this to be likely. School number 1 averaged 9 achievements per course, school number 3 averaged 10.5 per course, school number 4 averaged 10.2 per course and school number 5 averaged 10.0 per course. But even if some courses did add more then 12 achievements each, it does not appear likely that anything approaching 231 achievements could be realized in an ordinary Master's degree as now offered in these schools.

A similar analysis in connection with the 20 knowledges most frequently identified by librarians indicates a similar result, as shown in table 5.

Table 5

EDUCATIONAL ACHIEVEMENTS MOST FREQUENTLY STRESSED FOR PUBLIC SERVICE LIBRARIANS AND FOUND IN LIBRARY SCHOOL CURRICULA

Intellectual Level	No. Identified	No. Identified in Curricula of Five Library Schools				
		1.	2.	3.	4.	5.
Knowledge	20	15	17	17	17	10
Comprehension	10	8	8	11	10	5
Application	19	8	9	10	9	5
Analysis	9	5	7	4	4	5
Synthesis	8	4	5	4	3	4
Evaluation	1	3	3	3	1	2
Social Skills	6	0	1	0	1	0
Totals	82	43	49	59	45	31

The highest average number of achievements which could be assumed from these data would be six per course in school number 3. Assuming six new achievements were required in each of 13 courses the necessary achievements do appear to be more nearly possible in relation to the 20 most desirable knowledges than was the case for the 64.

To understand what this means to the overall acquisition of knowledges and the broad development of intellectual skills, some interpretation must be made of three important factors: (1) the relative emphasis placed on levels of intellectual achievement by librarians and by curricula; (2) the particular knowledges upon which the development of higher intellectual skills was stressed; and (3) the significance of teaching methods to the development of higher intellectual abilities.

C. Important Factors Influencing Acquisition of Knowledge and Development of Intellectual Skills

Data given previously have been mostly numerical. Some of the discussions which follow are more meaningful when expressed in percentages. When degrees of relative emphasis are shown, the relativity is confined within separate bodies of data such as that body of data relating to libraries and other bodies of data relating to individual library schools.

Table 6 illustrates this using the data from libraries and from library school number 1 with respect to the 20 most frequently identified educational objectives.

Table 6

RELATIONSHIPS TO BE OBSERVED IN COMPARING LIBRARY DATA AND CURRICULAR DATA

Intellectual Level	Library Data	Library School #1. Data
Knowledge	20	15
Comprehension	19	8
Application	19	8
Analysis	9	5
Synthesis	8	4
Evaluation	1	3
Social Skills	6	0
Totals	82	43

Twenty knowledges were identified by librarians. The relative emphasis by librarians on these knowledges is then, between 20 knowledges and the 62 other achievements (total of 82 achievements minus 20 knowledges) desirable in connection with them. The relative emphasis on comprehension is indicated by relating the 19 for comprehension to the total of 82 achievements, and so on down the line with all levels of intellectual skills. The relative emphasis for schools were obtained in the same way. In the school example, the relative emphasis on knowledge would be 15 related to the total of 43 and so on. It is these relationships within one body of data that are then compared with the relationships within another body of knowledge. Comparisons and tables, hereafter, will be expressed either in numbers or percentages as the need of the interpretation dictates.

1. Relative Emphasis on Levels of Intellectual Achievement

a. By Librarians. The table below shows the relative emphasis by librarians on seven intellectual levels as reflected in the Taxonomy of Librarianship. This relative emphasis is shown for the entire 64 knowledge areas which were identified as of importance to public service librarians and which were considered the responsibility of the educational institutions. Emphasis is also shown for the 20 of those 64 which were identified ten times or more and are, therefore, considered the most important. The numbers in the columns indicate in how many of those same 64 and 20 knowledge areas the higher intellectual skills also were considered necessary by librarians.

Table 7

RELATIVE EMPHASIS ON LEVELS OF KNOWLEDGES, SKILLS, AND ABILITIES, AS IDENTIFIED BY LIBRARIANS IN LARGE PUBLIC LIBRARIES

Level of Knowledge, Skill, or Ability	A. Total Identified by Librarians	B. Twenty Most Frequently Identified
1. Knowledge	64	20
2. Comprehension	60	19
3. Application	44	19
4. Analysis	27	9
5. Synthesis	14	8
6. Evaluation	4	1
7. Social Skill	18	6
Totals	231	82

Tests of significant differences show the relative emphasis on levels in the two lists to be the same The discussions, hereafter, will be confined largely to the list of 20 as a representative sample.

It can be seen from Table 7 that librarians strongly emphasized the need for the higher intellectual skills. They did not indicate that library education for public service librarians should be limited to the learning of factual knowledge. On the contrary, they emphasized the need for the more complex achievements. Furthermore, many of the objectives emphasized were those representing a broad and overall view of the library's operation rather than those closely allied to the techniques of "Librarianship." Clearly, any suspicion that librarians believed the most important objectives of professional education should be narrowly vocational in nature was dispelled by the types of knowledges and skills they stressed. The 20 knowledges and their related behaviors identified most frequently by librarians and indicating the nature and breadth of their scope were listed in Chapter V. under "4. Librarians' Emphasis on Educational Objectives." Each knowledge is discussed in detail later in this chapter.

b. By Library Schools. A comparable table was drawn from library school curricula regarding the 20 most frequently identified knowledges. The differences in the relative emphasis on the seven levels of intellectual achievement by librarians and by library curricula will be discussed in the following paragraphs.

Although librarians emphasized comprehension 95 percent as much as they did knowledge, emphasis given in five library schools ranged from only 47 to 65 percent. A similar situation existed in the emphasis on application. Again, librarians emphasized application 95 percent as much as they did kmowledge, but library schools' emphasis varied between 47 and 59 percent. From the level of analysis through the remaining skills, there appears to be a change in pattern. It can be seen in Table 8 that, after application, the relative emphasis on analysis, synthesis, and evaluation by library schools is greater than that of librarians.

Table 8

RELATIVE EMPHASIS ON LEVELS OF INTELLECTUAL ACHIEVEMENT GIVEN BY LIBRARIANS AND LIBRARY SCHOOLS BASED ON TWENTY SUBJECT-MATTER AREAS

Level of Achievement	Levels Identified by Librarians in %	Levels Identifiable in Curricular Material in %					
		#1	#2	#3	#4	#5	Avg.
Knowledge	24.4	34.9	34.6	34.6	37.8	32.3	35.0
Comprehension	23.2	18.6	16.4	22.5	22.2	16.1	19.4
Application	23.2	18.6	16.4	20.4	20.0	16.1	18.4
Analysis	11.0	11.6	14.3	8.2	8.9	16.1	11.5
Synthesis	9.7	9.3	10.2	8.2	6.7	12.9	9.3
Evaluation	1.2	7.0	6.1	6.1	2.2	6.5	5.5
Social Skill	7.3	0	2.0	0	2.2	0	.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The data collected in this study shows the concentration of library education on the higher intellectual skills was upon a limited number of very specific educational objectives. Such concentrated emphasis, unless examined and explained, could lead to misinterpretation as to how much the higher intellectual skills were developed in a broadly applicable context. Over 50 percent of the objectives at the level of comprehension or above were concentrated on only three of the most frequently identified educational objectives. One of these educational objectives was "3.5 To know the techniques of research, analysis, and systematic inquiry." Librarians' emphasis on this particular objective was broad in scope, including such activities as the investigation and solution of a variety of problem situations, the processes involved in studying a community and relating services to the needs of that community, the analysis of procedures and routines and other practices within a library, and similar activities. In library education, factual knowledge related to this objective was found in orientation courses, and those dealing with advisory services, technical services, research, administration, and automation. Interview questions 16, 17, 25, and 26 were designed to identify to what extent higher skills were sought by instructors in just such types of situations as the examples above which librarians had stressed. Aside from the courses dealing with automated applications to library operations and with research methodology, the data revealed very few other courses attempted to develop the higher level skills in the broad terms identified by librarians.

The second of the three educational objectives which had a higher emphasis in education on the more complex skills than librarians themselves had specified for public service personnel, was "5.41 To know that public libraries must be selective in the collection and retention of materials." Librarians emphasized the selection of materials from the standpoint of choosing a book to suit a particular public service task such as helping a patron choose a book, selecting a likely reference source, developing a reading program in connection with the local school curriculum, and other similar functions. These, for the purposes of this study, did not fit into Bloom's category of "evaluation against criteria" as well as they did the category of "application with interpretative judgment." They were, therefore, placed at the application level rather than the evaluation level. Selection courses, however, stressed selection against accepted criteria and so, in fairness, had to be placed at the evaluation level.

Although some of the other more complex skills and thought processes were undoubtedly also developed in such an evaluation, it is extremely hard to judge the extent to which such skills as analysis and synthesis were really developed. Some instructors indicated that students were required to draw their own conclusions after having read the materials. In other instances, students were allowed to choose materials solely on the basis of published reviews. The two approaches offer rather different opportunities for the development of intellectual skills and abilities. But, assuming that the higher skills were developed in connection with selection, they were so oriented toward a particular and specific task that their value for broad intellectual development should not be overestimated.

Possibility of overestimation of the value of selection in developing all the higher skills exists not only because of the specificity of the task toward which it was aimed but in an unavoidable but likely distortion of data as well. As mentioned in Chapter V, evidence of an ability at the level of evaluation presumed achievement of the intellectual levels below it. In keeping with this assumption, every time an evaluation exercise in selection was found, the development of skills of comprehension, application, analysis, and synthesis also had to be assumed and recorded. This possibility of distortion of library data also existed. But, the selection of materials, as applicable to public service functions, was placed at the level of "application with judgment (3.30)" rather than the level of "evaluation against criteria (6.20)." There was not, therefore, the same distortion at the higher intellectual levels as was the case with library school data because 3.30 does not assume the development of analysis and synthesis as does 6.20.

Knowledge about specific tools (educational objective "5.93 To know the characteristics of specific library materials") was the third area of concentration in which library education data appeared to exceed library data in its relative emphasis on the higher skills. Judgment regarding the value of this emphasis is subject to the same possibilities of misinterpretation as was the case of selection. The possibility, or even probability, exists that the schools' objectives were being aimed at such a limited and specific purpose that, again, their value for broad development should not be overemphasized. Evaluation of specific reference tools, for example, against accepted criteria created the same kind of distortion as that explained above. Also, as was mentioned in the discussion of selection, the degree to which complex skills were really required to complete a classroom assignment was difficult to judge. This brings us logically to the question of how much influence teaching methods have on achievement of educational objectives.

2. Significance of Teaching Methods on What Educational Goals are Achieved

In the research methodology employed in this study, as noted in the previous chapter, curricular material was credited with seeking the highest level of achievement that appeared justified after analysis, even though there was no real assurance that students reached that level. The degree of success in developing the higher skills and abilities depends to a great extent upon the kind of learning experience involved in the teaching process. Although this was touched upon earlier in Chapter VI, reference courses will be used here as a further example indicating how teaching methods influence the level of intellectual development.

Reference courses are frequently taught by giving students lists of books in some unitized form such as by type of book or by type of subject covered. Questions or problems are given simultaneously which presumably force the student to use and become acquainted with those specific tools. The efficacy of such a method for teaching familiarity with tools is not of concern here. However, the point is that constraints and controls are in force which may influence the amount of understanding, application, and other skills which can or will be developed. These structured situations can vary from school to school and especially from instructor to instructor.

In discussing learning experiences, Ralph W. Tyler itemized and discussed factors which contribute to the effectiveness of learning.[6] He stated that information learned in problem-solving situations (such as simulated reference questions may be under certain circumstances) is less likely to be rote memorization of pure knowledge than some other types of learning.[7]

In at least one course of study, it was noted that, in connection with each problem assigned, the specific reference source was actually given in which the answer could be found. Although this may have been intended as a problem solving situation, little probably comes from it except training in the mechanics of finding a book. Even this may be limited, for in the teaching situation the books are sometimes reserved or set aside in a special collection for the student's use. Some technique for using that particular tool may also have been developed. The individuality of a tool may warrant some of this type of assignment, but the real question is whether this kind of specificity contributes to the best utilization of the student's time or develops the desirable levels of intellectual achievement.

Tyler also stressed the importance of teaching that which is worth remembering. Information important enough to be remembered should be made the focal point of the assignment rather than being a side issue considered in an offhand fashion.[8] He continued by emphasizing the importance of frequency of use of information for increasing the probability of remembering the knowledge learned.[9] These two points immediately bring to mind weaknesses which often are inherent in some reference assignments. These assignments are frequently a search for some obscure piece of information such as "What is the average height of the Ibos?" As grading is often based on whether or not the student finds the right answer, it would appear that stress may be placed upon the insignificant fact that Ibos are over six feet tall rather than the significant information regarding the value and use of the tool used. A second weakness is that these are often one-time learning situations. There is a possibility that learned information may be insufficiently reinforced when an instructor feels a great many books need to be covered. Under such circumstances there is little time for repetitive reinforcement of knowledge or skills.* A statement by a recent graduate, "Reference courses are a frantic shuffling of books from which the student comes away with nothing but a stack of messy 3" x 5" cards," is extreme but it does make a point. Assignments in which the students are under pressure to become superficially acquainted with large numbers of books probably did not contribute greatly to higher skills.

The sterility of some instruction and classroom environment has not gone unnoticed by many library school faculty. Examples were found of assignments devised to require a choice of a tool and a report on the part of the student. This report included the reasoning behind the choice, the advantages and disadvantages of other sources, and other judgmental factors. This problem situation, even if the selection were made from a limited list, offers opportunity for the development of the higher-level skills and abilities. The case method and role-playing technique also were found to have been introduced in some courses in order to alleviate some of the artificiality of the instructional situation. But these latter teaching practices were in the minority.

3. Preliminary Conclusions Regarding the Curricular Emphasis on Higher Intellectual Skills of Three Educational Objectives

By interpretations of the real significance of the educational emphasis on the higher skills related to the three objectives just discussed,** some conclusions may be drawn with regard to their value for the development of these skills in the broad and general context.

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* In some cases the number of books covered in one term was as high as 300 to 350 titles.

** 3.5 To know the techniques of research, analysis, and systematic inquiry.
5.41 To know that public libraries must be selective in the collection and retention of materials.
5.93 To know the characteristics of specific library materials.

(1) Courses in automation and research methodology which consider analysis, research and systematic inquiry do stress the more complex skills in broad contexts which may develop a number of abilities librarians think important. But frequently these courses were optional and it can be assumed, therefore, that many students missed these opportunities to develop these higher skills while in library school.

(2) For the most part, the remaining curricular emphasis on the higher intellectual processes focused on two very specific and limited objectives (selection and knowledge of specific materials) in such a way that their contribution to the broad development of complex skills still remained in question.

(3) Although the intent of the library schools, their plans of curricula, and individual instructors may have been to develop higher intellectual skills, the methods of teaching determined to a great extent what intellectual levels were actually achieved.

D. Comparison of Other Needs and Curricular Content

The three educational objectives discussed above, which received the bulk of curricular emphasis involving the higher intellectual skills, were among the 20 most frequently identified by librarians. The remaining 17 are considered below in a general order of their frequency of identification by librarians. Some changes were made in sequence to facilitate discussion. The educational outcomes which appeared to be stressed by the curricula analyzed are compared with those which librarians specified as important.

3.9 To know the principles of social psychology and human relations.

This knowledge and its related skills and abilities received more emphasis by librarians than any other classification in the Taxonomy of Librarianship. Librarians indicated that there was a great need for developing not only an understanding of these principles but of how they are applied for effective functioning in an institution such as a library. Librarians felt they were important both from the standpoint of dealing with patrons as well as managing and dealing with other library personnel. Because of this stress on these matters of social psychology and human relations, the category for social skills (7.00) was added to the Taxonomy of Librarianship presented in Chapter V. Although this was considered of highest priority by librarians, library school curricula gave it little recognition. In many cases the instructors and curricula indicated that the importance of these matters was merely mentioned. Real and constructive effort to teach either principles or how they can be applied in a library situation was almost totally lacking. As a result, the student was left to learn what he could on the job.

2.4 To know the clientele which makes up the community.
2.6 To know about other institutions within the community.

Knowing the characteristics of the library's patrons was identified as important. But librarians also brought out the need to know how to determine what constitutes the library's clientele and environment. These techniques of surveying a community to identify and understand the library's environment are important knowledges and abilities in the view of librarians. In a few instances, attempts were made in course work to have students relate some small project or service to a particular situation.

But the overall techniques and abilities involved in going into a community, identifying its needs, and relating a program of service to those needs were not being developed generally in library school curricula.

1.60 To know literature.
5.92 To know the literature and other forms of material which are represented in the library's collection.

A thorough knowledge of a library's own collection comes from on-the-job training. Library schools do contribute, however, to knowledge of frequently used materials usually found in public libraries through courses such as reference, literature of the humanities, bibliography in science and technology, and similar courses under various names. But the extent of responsibility that library schools can be expected to assume for this kind of education is limited in view of the duration of the period of professional training.

3.91 To know some of the principles of learning and the elements of supervision.

Simple instructional techniques and the elements of supervision ranked sixth in the number of times they were stressed by librarians. The fact that nearly all professional personnel may expect to have supervisory responsibilities was sometimes mentioned in administration courses. But in no instances studied could it be found that principles of supervision were taught. Equally, if not more neglected, were the techniques of instructing. There was very little data to indicate that students were even made aware that professionals would be called upon to train other personnel and to instruct patrons in how to use the library facilities. The development of these important abilities appeared to have been ignored by library school curricula.

3.7 To know some of the principles of effective communication.
3.72 To know the principles of public relations as well as the external channels of communication open to a library.
5.91 To know that patrons do not or cannot always make their wishes known.

Both internal communication and external communication are of great importance to essential library tasks according to librarians. A few schools were found to have initiated courses in communication theory and processes. It was not possible to collect enough data for an adequate analysis of any one of these courses, however. Some very specific techniques such as storytelling and book reviewing, were being developed. Oral reports were presented in classes by students but the techniques of presentation were not evaluated. Written assignments and term papers were frequently required but a number of instructors indicated that the literary quality of presentation was not evaluated. But data did not support a conclusion that communication skills were being developed generally in library schools.

The techniques of good public relations is another area that was not taught. Students were made aware of the fact that maintaining good public relations is important but left to their own devices beyond that.

The ability to communicate with patrons in order to identify their needs is basically a communication skill and is the heart of public library service. Yet, only two limited efforts could be found in library schools which attempted to train students how to perform effectively in this activity. All other reference to this critical ability was factual knowledge that it was an important ability to possess.

5.52 To know the tools of bibliographical searching.
5.53 To know the techniques for finding particular kinds of information.

Knowledge of both the tools and techniques of searching are vital according to the librarians contributing data to this study. Factual knowledge with respect to the tools of bibliographical searching was stressed in the library school curricula. How effective the development of the techniques of searching may have been is another one of the factors highly dependent on the methods of teaching. Evidence in the curricula indicated that development of a systematic approach was not being realized. A study done for the National Science Foundation corroborates this for it found that the sequence of reference searching by the librarians studied tended to be rather haphazard rather than systematized.[10] How systematic such searching can be is often debated and cannot be resolved here.

3.1 To know the techniques of planning and the implications of implementation which may exist in any proposed change or revision of an existing plan or operation.
3.2 To know the techniques of the decision-making process.

The abilities to formulate and implement plans were considered important by librarians. Administration and automation courses both contained some factual knowledge appropriate to this educational objective. Both types of courses exhibited the development of some of the higher intellectual processes involved as well. For example, assignments sometimes involved the planning for automating a library activity or the arrangement of a reference room.

The ability to identify and judge the relevant factors in establishing a policy, as well as to work out a satisfactory and fitting decision or policy, are closely related to planning and were also specifically and frequently mentioned by librarians. Decision-making and policy were evident as subjects of consideration in library school curricula. In such courses as cataloging, selection, and reference, discussions of policy were limited to those applicable to a particular type of department. Some courses in childrens' and young peoples' services did consider what factors should determine policies and how policy statements should be written. Sample policies from existing libraries were read and discussed in a number of administration courses. The data showed, however, that instruction generally went little beyond mention of the importance of making decisions or of having formalized policies. Students seldom were required to do much in the way of analysis for determining a suitable policy. Only one instructor interviewed indicated that the student was required to write a policy for a specific situation. The particular policy under consideration in this case dealt with the use of adult books by juveniles. As a result little data emerged to substantiate a conclusion that needed abilities of application, analysis, and synthesis were being developed.

3.52 To know what are the tried and proven applications of machines and equipment to the automation of specific library procedures, as well as what new applications presently are being tested.

Librarians recognized the importance of the newer technologies such as the use of computers and other equipment.

Of particular interest were the applications for achieving a higher level of operational efficiency and library service rather than the mechanical aspects of equipment and programming. The development of such comprehension in students of library science has been emphasized along with the more complex abilities of application, analysis, and syntheses in courses in automation.

5.2 To know the prevailing opinions with respect to the purposes of a public library.

Knowing the purposes that a public library should serve was pointed out as being of importance by librarians who contributed data. The prevailing opinions on these purposes were adequately covered by library education from the factual standpoint in a number of different types of courses. Judging from the information received, there was also some emphasis on encouraging students to develop their own philosophies which would have involved some analytical thinking. However, the development of such individual attitudes falls within the affective, rather than the cognitive, domain so that aspect was not considered here.

5.61 To know the principles of cataloging.
5.62 To know the structure of specific classification schemes.

The levels of proficiency with regard to cataloging and classification which librarians deemed necessary for public service librarians were an understanding of the principles of cataloging and the structures of classification schemes and subject headings. These appeared to be developed in the curricula although librarians indicated there was stress on the Dewey Classification to the neglect of other systems.

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VIII. CONCLUSIONS IN RELATION TO STATED HYPOTHESIS

The hypothesis as stated in the first chapter of this study was:

> LIBRARY EDUCATION IN A SELECTED NUMBER OF AMERICAN LIBRARY ASSOCIATION-ACCREDITED LIBRARY SCHOOLS OFFERS THE TRAINING NEEDED TO PERFORM SPECIFIED TASKS ACCEPTED BY ADMINISTRATORS AND PROFESSIONAL LIBRARIANS AS NECESSARY TO THE OPERATION OF A LARGE PUBLIC LIBRARY.

In testing this hypothesis, an inventory was made of the principal behaviors required for satisfactory performance of public service activities in large public libraries. The 231 knowledges, skills, and abilities which librarians themselves identified through the critical incident technique were organized into a Taxonomy of Educational Objectives for Public Service Librarians.

These 231 behaviors were based on 64 specific subject knowledges, with the remaining 167 representing more complex cognitive behaviors utilizing those knowledges (see Table 7). These behaviors consisted of comprehension, application, analysis, synthesis, and evaluation as defined by Bloom and associates. One other category, social skills, was created to accommodate abilities defined by librarians as important but not readily classed under the other categories. Together these 231 behaviors of the Taxonomy of Librarianship comprised a partial list of desirable professional qualifications for librarians. They presented, not a list of simple vocational attributes, but a series of knowledges and intellectual qualities of high professional standards calling for considerable individual preparation.

The Taxonomy of Librarianship was then employed as a classification of educational objectives against which graduate professional library education was compared. There were two major problems to consider in these comparisons which tested the hypothesis: (1) The adequacy of knowledges being taught and (2) the adequacy of the development of the higher intellectual skills employing these knowledges. It should be remembered that these conclusions below, which are critical of library education, were based on the data collected in this study from a representative sample of abilities needed in professional library personnel and content of library schools' curricula. These samples are assumed to be typical although exceptional instruction and course content may exist in certain instances.

1. The following conclusions were drawn with regard to the teaching of knowledges needed by public service librarians.

    CONCLUSION I
    A number of important subject knowledges which librarians identified as of particular importance were not, for the most part, being taught in library schools. Even though these knowledges draw heavily from the disciplines of sociology; psychology and human relations; communication; management; and education, they are of such import to professional librarians in providing service to modern-day urban areas that assurance of their acquisition should be considered by library education. (Discussion: Chapter VII, Section D.)

    CONCLUSION II
    Library schools were covering the subject knowledges traditionally considered unique to the profession of librarianship and so defined in this study, such as cataloging, classification, etc. (Discussion: Chapter VII, Sections B., C., & D.)

2. The following conclusions were drawn with regard to the teaching of higher intellectual skills of comprehension,

application, analysis, synthesis, evaluation, and social skills

CONCLUSION III
Even where recognition was being given to the importance of knowledges in related areas mentioned in Conclusion I, the instruction was generally not beyond the awareness level. Neither the principles of the disciplines themselves nor the techniques of utilization of these principles was being taught. (Discussion: Chapter VII, Sections C. & D.)

CONCLUSION IV
A number of the courses developing higher skills were electives, such as some of those in research methodology, automation, and administration. Thus, many students may have missed the available opportunities to develop these higher skills which did exist in curricula of library schools. (Discussion: Chapter VII, Section C.)

CONCLUSION V
Although objectives as stated in school catalogs, and as defined by instructors, indicated an intention to develop the more complex intellectual skills, the emphasis in actual teaching (with the exception of a few specialized areas, such as courses in research methodology, automation, selection and library materials) was largely upon factual information to the relative neglect of other desirable levels of achievement. (Discussion: Chapter VII, Section C, Part 2, and Section D.)

IX. RECOMMENDATIONS FOR RELATED RESEARCH

In addition to the findings directly related to the hypothesis of this study, a number of areas for related research have been suggested by the data collected and analyzed.

Recommendation 1. That identification of additionally needed knowledges, skills, and abilities for effective professional performance be undertaken.

Such results could aid library educators in their continued efforts to design meaningful and quality professional library education.

Recommendation 2. That formal library educators investigate the problem of the lack of a common background in preprofessional education of students in order that acquisition and development of the necessary knowledges, skills, and abilities may be guaranteed.

The question of what uniformity of preprofessional education library schools can assume in an undergraduate degree was raised a number of years ago by Bernard Berelson. In his introductory remarks as editor of the Chicago Conference in 1948 on library education, he noted that although there was almost wholehearted agreement that a liberal arts degree should be required there was almost equal disagreement as to what this meant.[1] Clarence H. Faust contended at that same conference that the term "liberal education" was about as vague as "liberty," "democracy," and "equality."[2]

A number of other educators have considered the reasons for, as well as the problems created by, the changing content of the liberal arts degree and the resulting implications for the preparation of professional personnel.[3] With this changing content of liberal arts education, what commonality of knowledges, skills, and abilities among students can library schools assume? Or, if little can be assumed, what must be the library schools' posture with regard to admissions or the alleviation of deficiencies? Will assuring adequate preparation of a student body with such diversified backgrounds require more interdisciplinary courses; the design of courses encompassing the desirable portions of a number of other subject fields; the use of more departmentally-shared faculty; a review of the applicability of specific kinds of courses in librarianship for all students; a consideration of the needs for specialization for certain students; special requirements for students deficient in some subject areas; or some combination of all these?

Recommendation 3. That attention be given by library educators to the course content in light of the identified and needed knowledges, skills, and abilities and to the methodologies of teaching which effectively assure the acquisition and development of the desirable levels of intellectual achievement.

An understanding of what the end results of library education should be, determined by inovative educators and functioning practitioners, could facilitate the attainment of those goals by providing guidance for curriculum planning. These defined goals, coupled with a reevaluation of what courses are required and what are electives, could then be considered in terms of the most appropriate teaching methods. Such an approach could provide a degree of assurance of suitably and adequately trained professional personnel.

Recommendation 4. That library administrators reexamine their responsibilities for in-service training and develop suitable programs to fulfill such responsibilities.

Of the 83 knowledges needed by public service personnel, 19 were not considered the responsibility of formal library professional education. Thirteen of these 19 knowledges and their related skills and abilities are so closely connected with a particular institution that they are best learned on the job. Since this represents 16 percent of the requirements for professional proficiency, it indicates that the administrators of large public libraries may need to review their own responsibilities with regard to library education. Data indicated that librarians supported a high level of professional education for their major emphasis was not oriented toward technician-type training. Emphasis was greater upon the broader and more professional aspects of the library's operations.

If library administrators are to provide adequate on-the-job training, they first must have an understanding of what is needed to augment formal professional education. Some of the studies which have undertaken to determine in-service training needs were mentioned in Chapter I. of this study. These have concentrated, however, on the non-professional worker rather than exploring the needs of the new professional. Most in-service training programs today are little more than a cursory introduction to the facilities and personnel of an institution. A problem at the professional level, for example, is that a new graduate is not able to catalog a book in a manner suitable to a particular library's collection.

This and similar problems were mentioned frequently by librarians to this investigator. These problems were not cited, however, as the responsibilities of formal education, but were recognized as missing links in the educational process. Thorough, systematic, and well-organized programs of on-the-job training may be necessary if library administrators are to help educators achieve and maintain a comprehensive approach to professional education that practicing librarians indicated desirable.

All of these areas of further research merit consideration if a favorable anticipatory outlook for progress in the library profession is to prevail.

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Appendix 1

A. Participating Libraries:
- Atlanta Public Library
- Boston Public Library
- Cleveland Public Library
- Chicago Public Library
- Denver Public Library
- Detroit Public Library
- Enoch Pratt Free Library
- The Free Library of Philadelphia
- Los Angeles Public Library
- Miami Public Library
- New Orleans Public Library
- Oklahoma County Libraries
- Public Library of the District of Columbia

B. Participating Library Schools.
- Case-Western Reserve University, School of Library Science
- Columbia University, School of Library Service
- Drexel Institute of Technology, Graduate School of Library Science
- Emory University, The Division of Librarianship
- Florida State University Library School
- University of California at Berkeley, School of Librarianship
- University of California at Los Angeles, School of Library Service
- University of Denver, Graduate School of Librarianship
- University of Illinois, Graduate School of Library Science
- University of Michigan, Department of Library Science
- University of Oklahoma, School of Library Science
- University of Southern California, School of Library Service

APPENDIX 2: METHODOLOGY OF RECORDING DATA

The procedure involved in recording data is described in the three sections below.

1. Data from Librarians Based on Critical Incidents

The critical incidents were collected on forms containing the instructions below. These forms were distributed to the librarians at the briefing sessions prior to individual interviews.

LIBRARIANS' DESCRIPTIONS OF SITUATIONS AND PROFESSIONAL PERFORMANCE
DO NOT SIGN YOUR NAME
Please do not name the person concerned in your report.

Instructions: The research project in which you have been asked to participate is designed to discover the specific things that a librarian does in order to be effective in performing certain professional jobs. Ultimately, these will be translated into terms of knowledges, skills, and abilities which could formulate the basis for the design of library education curricula and the statement of educational objectives in librarianship.

We are interested in obtaining information in a variety of areas of library activity. You have had many opportunities to observe librarians performing professional tasks. Think back to a recent incident (preferably within the last month) in which a professional librarian performed effectively. Please describe the incident as completely as you can under the following headings: a. the specific circumstances of the situation, b. exactly what the professional did and what were the steps involved.
WRITE HERE: (Use reverse side of page if necessary.)
a.

b.

Job type for which the knowledges, skills, and abilities evident in this incident would be important: Administration ___, Public Service ___, Cataloging ___, Selection ___, Acquisitions ___, Childrens' or Young Peoples' Services ___, All ___.
Carnegie Library of Pittsburgh, Pittsburgh, Pa. Code_______.

Think back to a recent incident (preferably within the last month) in which a professional librarian performed ineffectively. Please describe the incident as completely as you can under the following headings: a. the specific circumstances of the situation, b. exactly what the professional did, c. what the professional should have done and the steps involved.

WRITE HERE: (Use reverse side of page if necessary.)

a.

b.

Job type for which the knowledges, skills, and abilities evident in this incident would be important: Administration ___, Public Service ___, Cataloging ___, Selection ___, Acquisitions ___, Childrens' or Young Peoples' Services ___, All ___.

Carnegie Library of Pittsburgh, Pittsburgh, Pa. Code_______.

An interview was scheduled with the observers who had described incidents in writing to afford these observers (professional librarians) the opportunity to identify the knowledges, skills, and abilities which contributed to the effectiveness of performance. One effective incident was written up, for example, as follows:

a. The Specific Circumstances of Situation. The librarian was asked to prepare a twenty-minute talk on the use of indexes, trade catalogs, periodicals, etc. in the mechanical engineering field for a class of 20 from a neighboring technical school. This class was above-average ability.

b. Exactly What the Professional Did and What Were the Steps Involved. (1) He selected samples of the publications he planned to discuss. (2) He photographed (on a much larger scale) one of the pages of the Engineering Index to use for his discussion. (3) He selected a few topics and used them to illustrate the techniques of search. (4) He elicited topics from the class, using these for illustrating the search technique.

During the interview with this particular observer, he identified the following knowledges, skills, and abilities pertaining to the above incident which he felt were revealed:

(1) knowledge of specific tools
(2) knowledge of the library's collection
(3) knowledge of subject areas
(4) knowledge of abilities and reading levels
(5) knowledge of reading interests
(6) ability to handle people
(7) ability to plan and present a program
(8) ability to instruct
(9) knowledge of techniques and some of the media used in teaching
(10) knowledge of how to search a catalog, an index, etc.

The recording and tabulating of information for the purposes of this study proceeded as follows.

(1) From the above descriptive list of knowledges, skills, and abilities the level of intellectual skill involved was determined by comparison with Bloom's Taxonomy and through consultation with, and reference to, a number of authorities in the fields of psychology and education.

(2) These knowledges and skills which were identified were assigned a suitable class number taken from the preliminary working list which had been developed for recording purposes.* This class number served as a code by which the level of the intellectual skills was tabulated.

(3) A coding sheet was developed on which was recorded specific control information, such as the library at which that particular data was collected, the individual observer's identification number, the type of job for which these knowledges and skills were deemed desirable, and whether the information was collected by an effective or ineffective incident.

(4) The classification numbers appropriate to the knowledges and intellectual level identified were then listed on the coding sheet.

(5) This information was then recorded on marginal-hole punch cards. One card was made for each class number to be tabulated. All recording of data was reviewed and verified before cards were notched.

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* For discussion, see Chapter V., A. Collection of Library Data, 3. Data Collection.

(6) Punched cards were then ready for sorting and the tabulating of information onto tally sheets which could be totaled, summarized, and analyzed.

2. Data from Library Schools

The coding and tabulating of data from the library schools was carried out in a series of steps similar to those followed with data from librarians.

(1) Types of material were analyzed for each course and the subject knowledges, skills, and abilities were assigned appropriate classification numbers in the Taxonomy of Librarianship.

(2) These classes brought together groups of data by assignment to a classification number which were analyzed in the context of the type of assignment or activity expected of the student in order to determine the levels of intellectual skills which could have been developed.

(3) A coding sheet was drawn up on which was recorded the library school, the instructor, the type of course, whether it was a required course, and the type of data from which the information was derived (assignment, examination, interview, or outline).

(4) Similarly, as in the case of the data collected from librarians, information was recorded on marginal-hole cards.

(5) A separate punch card was made for each class number, as was done with the library information: all coding was verified and cards were notched.

(6) The information from these cards was then tabulated on tally sheets and the data compiled to make possible a comparison

with that from librarians.

3. Revision of Classification Numbers

After all tabulations and analyses were completed, the numbering of the classification was revised for the purposes of presentation in this study. These changes were made in order to eliminate the classes and their numbers within the main categories of the preliminary list which were never identified by any librarian as of importance to public service activities. This process of elimination was described in Chapter V.

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ABSTRACT

Two main purposes of this study were: (1) to determine knowledges and abilities needed by librarians to perform specific professional activities in large public libraries; (2) To determine the degree to which existing library education developed those knowledges and abilities.

Data was collected from librarians in 13 large public libraries and faculty in 12 library schools.

Librarians' responses were analyzed and a taxonomy of educational objectives for the preparation of public service personnel was compiled. Curricular content from participating library schools was analyzed and compared with those desirable educational objectives.

Not only were needed factual knowledges identified, but also higher levels of intellectual achievement (comprehension, application, analysis, synthesis, and evaluation as defined by a Committee of College and University Examiners in 1956).

Findings indicate that: (1) librarians placed high priority on the complex skills and abilities; (2) needed subject matter related, but not unique, to librarianship was generally not included in some library school curricula; (3) most factual knowledges regarding librarianship was generally adequately taught; (4) the development of the higher intellectual skills and abilities above factual knowledge was relatively neglected in courses which all students would have the opportunity to take in completing the usual Master's course.